University of California, Berkeley

The Gateway New Academic Building Project

Addendum Number 1 to the UC Berkeley 2021 Long Range Development Plan and Housing Projects #1 and #2 Environmental Impact Report

State Clearinghouse Number 2020040078

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1. Project Information

Project Title:	The Gateway New Academic Building Project
Location:	University of California, Berkeley Alameda County
LRDP Planning Zone:	Campus Park
Lead Agency:	The Regents of the University of California 1111 Franklin Street, 12th Floor Oakland, CA 94607
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Project Sponsor:	University of California, Berkeley Capital Strategies Physical and Environmental Planning 300 A&E Building Berkeley, CA 94720-1382
Certified 2021 LRDP Program EIR:	This Addendum documents that none of the conditions described in CEQA Guidelines Section 15162 have occurred and that the Proposed Project will not have any significant effects that were not already disclosed, analyzed and mitigated, as necessary, in the 2021 LRDP EIR (State Clearinghouse No. 2020040078). The 2021 LRDP is a comprehensive land use plan that guides physical development on the UC Berkeley campus to accommodate projected UC Berkeley population increases and expanded and new program initiatives. The 2021 LRDP and associated EIR are available for review at https://lrdp.berkeley.edu.

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2. Introduction

2.1 BACKGROUND, PURPOSE, AND PROJECT OVERVIEW

The University of California (UC) Berkeley 2021 Long Range Development Plan (2021 LRDP) is a comprehensive long-range land use plan that guides physical development on the UC Berkeley campus consistent with UC Berkeley's mission, priorities, strategic goals, and campus population projections through the 2036-37 academic year. On July 22, 2021, the UC Board of Regents (the Regents) certified the 2021 LRDP environmental impact report (2021 LRDP EIR), State Clearinghouse No. 2020040078, and approved the 2021 LRDP. The 2021 LRDP EIR provides a program-level analysis of the overall proposed development and campus population projections in the 2021 LRDP (up to 8,096,249 square feet of new building space for residential, academic life, campus life, and parking facilities and 11,731 new beds), as well as a project-level analysis for two student housing projects. The two student housing projects were approved by the Regents on July 22, 2021, and September 30, 2021, respectively.

The proposed Gateway New Academic Building Project (Proposed Project), a five-story, approximately 375,600-square-foot academic building proposed within the Campus Park, was identified and analyzed in the 2021 LRDP EIR and is consistent with the land uses and intensities of development contemplated in the 2021 LRDP, which prioritizes development sites on the Campus Park for academic and research space.

This Addendum uses a checklist format to document that project-specific activities are covered by the 2021 LRDP EIR pursuant to CEQA Guidelines Section 15168(c), which states that subsequent activities in a program, "must be examined in the light of the program EIR to determine whether an additional environmental document must be prepared." This Addendum and attached supporting documents have been prepared to document that the Proposed Project is consistent with the 2021 LRDP and that its potential environmental impacts are within the scope of those addressed in the 2021 LRDP EIR, pursuant to CEQA Guidelines Section 15168. This Addendum also documents that none of the conditions described in CEQA Section 21166 or CEQA Guidelines Sections 15162 or 15164 calling for preparation of a subsequent or supplemental EIR have occurred. Pursuant to the provisions of CEQA and the CEQA Guidelines, the Regents, acting as the lead agency, are charged with the responsibility of deciding whether or not to approve the proposed action.

2.2 ENVIRONMENTAL PROCEDURES

Pursuant to CEQA Section 21166 and CEQA Guidelines Section 15162, when an EIR has been certified or a negative declaration adopted for a project, no subsequent EIR or negative declaration shall be prepared for the project unless the lead agency determines that one or more of the following conditions are met:

- Substantial project changes are proposed that 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;

- Substantial changes would occur with respect to the circumstances under which the project is undertaken that require major revisions to 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
- New information of substantial importance that was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified or the negative declaration was adopted shows any of the following:
  - The project will have one or more significant effects not discussed in the previous EIR or negative declaration.
  - Significant effects previously examined will be substantially more severe than identified in the previous EIR.
  - 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 proponent declines to adopt the mitigation measures or alternatives.
  - Mitigation measures or alternatives that are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponent declines to adopt the mitigation measures or alternatives.

Where none of the conditions specified in Section 15162[1] are present, the lead agency must determine whether to prepare an Addendum or whether no further CEQA documentation is required (CEQA Guidelines Section 15162[b]). An Addendum is appropriate where some minor technical changes or additions to the 2021 LRDP or the previously certified EIR are necessary, but there are no new or substantially more severe significant impacts (CEQA Guidelines Section 15164).

In accordance with the CEQA Guidelines, as demonstrated in Section 3, *Project Description*, and Section 5, *Environmental Analysis*, UC Berkeley has determined that an Addendum to the 2021 LRDP EIR is appropriate for the Proposed Project.

[1] See also Section 15163 of the State CEQA Guidelines, which applies the requirements of Section 15162 to supplemental EIRs.

3. Project Description

3.1 LOCATION AND SETTING

The site for the Proposed Project is in the City of Berkeley in Alameda County. The site is part of the UC Berkeley campus, which is organized into five zones—the Campus Park, Hill Campus West, Hill Campus East, Clark Kerr Campus, and the City Environs Properties. The site is in the Campus Park. Major regional roadways serving the UC Berkeley campus include Interstate 580, State Route 13, and State Route 24. Hearst Avenue is the main local roadway serving the project site. Figure 1, *2021 LRDP EIR Study Area*, provides a regional location map.

The project site is located in the northwest quadrant of the UC Berkeley Campus Park on Hearst Avenue at its intersections with Arch Street and Le Conte Avenue. The project site was formerly developed with Tolman Hall, which was vacated in 2018 and subsequently demolished. The project site is bounded by Hearst Avenue to the north; University House Way and University House (the UC Berkeley chancellor's residence) to the east; Bayard Rustin Way, Morgan Hall, and Hilgard Hall to the south; and McFarlane Lane and Koshland Hall to the west. Figure 2, *Aerial View of Project Site and Surroundings*, shows the site vicinity.

3.2 PROPOSED PROJECT

Figure 3, *Site Plan*, shows the site plan for the Proposed Project. The Proposed Project would provide a new, 375,600-gross-square-foot, academic building that includes 213,270 assignable square feet. The building would include space for academic research, offices, classrooms, and other collaborative meeting spaces and house researchers, faculty, and students across multiple disciplines affiliated with the Division of Computing, Data Science, and Society (CDSS), which is currently housed in various facilities on the UC Berkeley campus. The Proposed Project would not result in student or employment population growth because the new building would house the existing CDSS departments.

The Proposed Project would include five above-grade floors and one basement (below-ground) level. From the open passage at the Morgan Bikeway, which runs through the building at grade, to the building's highest point, the roof coping would be 91 feet from the ground; the rooftop terrace at level 5 would be 69 feet above grade at the Morgan Bikeway. The building facade would be a mix of vision glass, etched spandrel glass, aluminum metal panels, and precast concrete and designed to provide a high degree of energy efficiency.

The Proposed Project would provide space for permanent occupancy of approximately 1,500 faculty, students, researchers, and staff in flexible lab and learning facilities. Peak daily building occupancy would be approximately 3,000 people. The building would provide a mix of flexible and operationally resilient office space, laboratories, collaboration areas, classrooms, and other meeting spaces. The building would also include shared community gathering spaces, an event space with a catering kitchen, a social kitchen, a café with an outdoor terrace, and associated support spaces. The top floor (level 5) would provide building

space and a rooftop terrace. The building would also provide bicycle storage and changing rooms and showers for bicyclists.

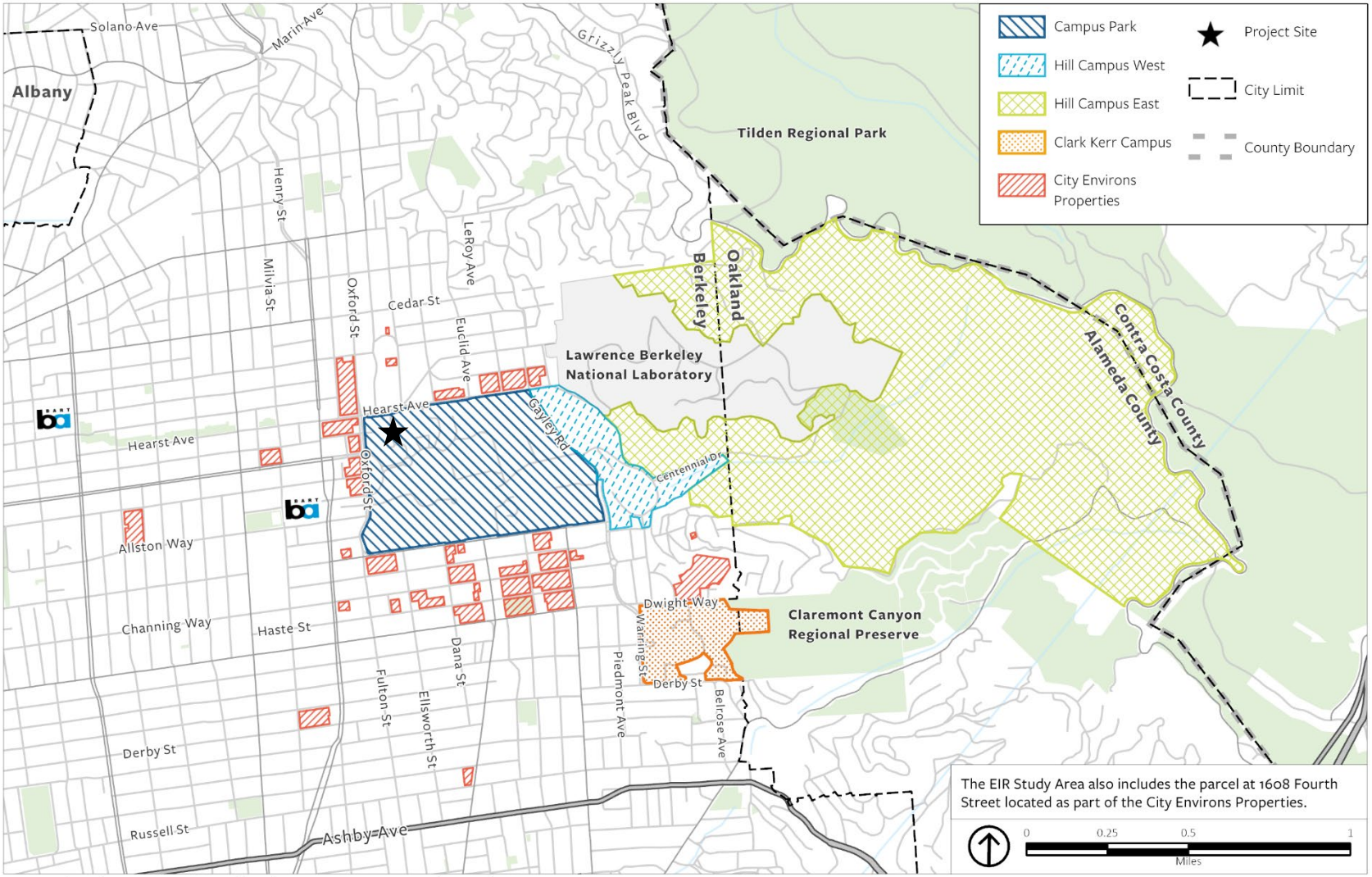
The Proposed Project has been conceived as an intellectual connector between the UC Berkeley campus and the community. To this end, the building and landscape would be designed to reinforce the north edge of the Campus Park and frame the major UC Berkeley campus gateway from the Hearst Avenue and Arch Street/Le Conte Avenue intersection.

The building would have two primary wings to the east and west that frame ground-floor outdoor courtyards and surround the internal open plan collaboration spaces. The outdoor courtyards would include a public plaza and gateway entrance to the north along Hearst Avenue and an amphitheater-style courtyard opening toward the Campus Park to the south.

The landscape, utility, and circulation plans include a mix of native and locally adapted, drought-tolerant grasses and trees, undergrounding of public utilities along Hearst Avenue, relocation of a street traffic signal pole, and improved accessibility and emergency vehicle access routes. Pedestrian and bike pathways through the project site would also be improved to meet UC Berkeley mobility and accessibility needs. The Proposed Project would comply with the University of California Sustainable Practices Policy. The project is designed to achieve or exceed the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED)™ Gold certification and, consistent with the fossil-fuel-free provisions of the policy, would incorporate electrification and not natural gas for building heat and hot water generation. Rooftop solar photovoltaics and a backup battery storage may be provided through a future power purchase agreement.

Figure 4, *Aerial View from the North*, and Figure 5, *View from the Southwest*, provide renderings of the Proposed Project.

Figure 1 2021 LRDP EIR Study Area



Source: Alameda County, 2019; Sasaki and Page, 2019; ESRI, 2020; PlaceWorks, 2022.

Figure 2 Aerial View of Project Site and Surroundings

Source: Google Earth, 2022 (imagery date: August 6, 2020); PlaceWorks, 2022.

Figure 3 Site Plan

Source: Weiss Manfredi / Gensler, 2022.

Figure 4 Aerial View from the North

Source: Weiss Manfredi / Gensler, 2022.

Figure 5 View from the Southwest

Source: Weiss Manfredi / Gensler, 2022.

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4. Coverage under the 2021 LRDP EIR

To determine the Proposed Project's coverage under the 2021 LRDP EIR, this section addresses the following questions:

1. Is the Proposed Project consistent with the project objectives contained in the 2021 LRDP EIR?
2. Is the Proposed Project consistent with the UC Berkeley land uses evaluated in the 2021 LRDP EIR for the project area?
3. Is the amount of development associated with the Proposed Project within the development program in the 2021 LRDP EIR?
4. Have the conditions described in CEQA Guidelines Section 15162 calling for the preparation of a subsequent EIR occurred?

Questions one through three are addressed in the remainder of this section and question four is addressed in Section 5, *Environmental Analysis*. Section 5 contains a detailed analysis of the Proposed Project's potential environmental impacts and determines that none of the conditions in CEQA Guidelines Section 15162 calling for the preparation of a subsequent EIR have occurred.

4.1 OBJECTIVES CONSISTENCY

The 2021 LRDP EIR contains the following objectives relevant to the Proposed Project.

- Maintain the Campus Park as the central location for academic life, research, and student life uses as well as student services, and provide a range of adaptable and multipurpose spaces required to promote excellence and leadership in teaching, research, and public service consistent with UC Berkeley's mission and Strategic Plan. Prioritize administrative and student life facilities in locations adjacent to but off of the Campus Park.
- Maintain natural areas as well as generous natural and built open spaces on the Campus Park and the Clark Kerr Campus.
- Plan every new project (i.e., renovation, strategic infill/ additions, and new construction) to support the optimal investment of resources, meet space needs and improve space utilization, and address deferred maintenance.
- Take advantage of UC Berkeley's urban location to prioritize mobility system improvements that promote an accessible, efficient, sustainable, and safe campus.
- Minimize private vehicle access in the Campus Park and prioritize transit, bicycle, and pedestrian access to and across the Campus Park to decrease carbon emissions, congestion, and parking demand.
- Prioritize improvements and create clearly defined routes for bicycle, pedestrian, transit, and micromobility networks to enhance UC Berkeley campus connectivity and safety, to make navigation more intuitive and inclusive, and to ensure access to the campus by all UC Berkeley constituents.

- Maintain and enhance the image and experience of the UC Berkeley campus and support the continuing evolution of UC Berkeley campus's notable and historic landscapes and architecture.
- Enhance the connectivity between UC Berkeley and surrounding areas through continued support of community partnerships and public programming in areas of shared interest, and the design of campus edges and UC Berkeley–owned properties in the community.
- Maintain, support, and enhance UC Berkeley's status as an internationally renowned, 21st-century, public research-intensive university and center for scientific and academic advancement by expanding its graduate and professional schools, policy institutes, research programs, laboratories, and institutions.

The Proposed Project would support these objectives as follows:

- The Proposed Project would create a new academic building within the Campus Park.
- The Proposed Project would provide space for academic research, offices, classrooms, and other collaborative meeting spaces and house researchers, faculty, and students across multiple disciplines, and has been conceived as an intellectual connector between campus and the community.
- The Proposed Project is on the northern edge of the Campus Park and has been designed to reinforce the edge of the Campus Park, frame the major campus gateway from the Hearst Avenue and Arch Street/Le Conte Avenue intersection, and create welcoming and accessible gathering spaces within two primary courtyards on the north and south edges of the building.
- The Proposed Project has been designed with pedestrian and bike pathways through the project site to meet UC Berkeley campus mobility and accessibility needs.

4.2 UC BERKELEY LAND USE CONSISTENCY

The 2021 LRDP organizes UC Berkeley campus land uses into the following categories: residential, academic life, campus life, parking, and open space. The 2021 LRDP EIR identifies that the highest priority needs for academic life space are classrooms and study space, followed by research space, and that academic life spaces under the 2021 LRDP will be primarily located within the Campus Park. The Proposed Project is therefore consistent with the land uses evaluated in the 2021 LRDP EIR.

4.3 DEVELOPMENT PROGRAM CONSISTENCY

The 2021 LRDP plans for up to 8,096,249 net new gross square feet (GSF) of residential, academic life, campus life, and parking facility space to be developed within the area governed by the 2021 LRDP, including up to 2,284,588 net new GSF of academic life space to be located primarily within the Campus Park. The Proposed Project would construct 375,600 GSF of combined academic life and campus life space in the UC Berkeley Campus Park. Therefore, the Proposed Project would result in total development within levels anticipated in the 2021 LRDP EIR. The 2021 LRDP also projected a total UC Berkeley campus population of 67,200 students and employees. The Proposed Project would provide a new building to house UC

Berkeley's existing CDSS and would not result in student or employment population growth at UC Berkeley. Therefore, the UC Berkeley campus population would remain within levels analyzed in the 2021 LRDP EIR.

With respect to site-specific projections, the Proposed Project was included in the 2021 LRDP EIR as a potential redevelopment project. Specifically, the Proposed Project was identified as project CP11 in the Campus Park and was conceptually planned for 408,000 square feet of academic life space in a building with nine stories above grade. Table 1, *Comparison of 2021 LRDP EIR Buildout and Proposed Project*, compares the Proposed Project to project CP11 in the 2021 LRDP EIR. As shown in Table 1, the Proposed Project would have a reduced square footage and building height than was analyzed at the program level in the 2021 LRDP EIR.

TABLE 1 COMPARISON OF 2021 LRDP EIR BUILDOUT AND PROPOSED PROJECT

Project Description	2021 LRDP EIR Buildout	Proposed Project
Project Characteristics		
Type of Project	Redevelopment	Redevelopment
Uses	Academic Life	Academic Life, Campus Life
Project Dimensions		
Square Footage	408,000	375,600
Beds	0	0
Parking Spaces	0	1
Stories Above Grade	9	5

Note: All numbers represent total buildout numbers, not net new.
Source: UC Berkeley, 2022.

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5. Environmental Analysis

5.1 ENVIRONMENTAL EVALUATION OF THE PROPOSED PROJECT

This Addendum documents that the Proposed Project would not result in any new significant environmental impacts, an increase in the severity of significant impacts previously identified and studied in the 2021 LRDP and 2021 LRDP EIR, or require the adoption of any new or considerably different mitigation measures or alternatives. Accordingly, this Addendum is the appropriate form of environmental review for the Proposed Project. This Addendum has been prepared to satisfy the requirements of CEQA Guidelines Sections 15164(a), 15164(d), and 15164(e).

The sections below provide an evaluation of the environmental impacts of the Proposed Project and are organized to correspond with the standards of significance in the 2021 LRDP EIR, consistent with Appendix G, *Environmental Checklist Form*, of the CEQA Guidelines. Each section contains a summary of the findings of the evaluation, organized into the following columns:

- Level of Impact for the 2021 LRDP in the 2021 LRDP EIR presents the level of significance identified for the 2021 LRDP in the 2021 LRDP EIR, using the following acronyms:
  - NI = no impact. For these topics, there is no adverse effect on the environment.
  - LTS = less than significant. These effects are noticeable but do not exceed established or defined thresholds, and no mitigation is required.
  - LTS/M = less than significant with mitigation. For these circumstances, an established or defined threshold would be exceeded and a significant impact would occur; mitigation is required and would reduce the impact to a less-than-significant level.
  - SU = significant and unavoidable. For these topics, a significant impact would occur, and continuing best practices (CBPs) and/or feasible mitigation measures would not diminish these effects to less-than-significant levels.
- Environmental Effects of the Proposed Project presents the level of significance identified for the Proposed Project based on the evaluation in this Addendum, using the following categories:
  - New Less-than-Significant Impact. The Proposed Project would have a noticeable but less-than-significant effect on the environment that was not identified for the 2021 LRDP in the 2021 LRDP EIR.
  - Same Impact as 2021 LRDP. The Proposed Project would create the same level of impact identified for the 2021 LRDP in the 2021 LRDP EIR.
  - Less Impact than 2021 LRDP. The Proposed Project would create a noticeable effect on the environment, with a lesser level of impact than was identified for the 2021 LRDP in the 2021 LRDP EIR.
  - Topic Not Applicable to the Proposed Project. The Proposed Project would not have the potential to create an impact on an environmental topic that was evaluated in the 2021 LRDP EIR.

The Proposed Project is subject to all mitigation measures and CBPs in the 2021 LRDP EIR, as applicable. Please see Appendix A, *Applicable Program-Level Mitigation Measures and Continuing Best Practices*, of this Addendum.

5.1.1 AESTHETICS

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
Topics Determined to Have No Impact in the 2021 LRDP EIR					
Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	NI		X		
Topics Evaluated in the 2021 LRDP EIR					
AES-1: Have a substantial adverse effect on a scenic vista?	LTS				X
AES-2: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	LTS				X
AES-3: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	LTS/M				X
AES-4: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact?	LTS				X

Key: NI = no impact; LTS = less than significant; LTS/M = less than significant with mitigation; SU = significant and unavoidable

Summary of Analysis

No new significant or more severe impact than analyzed in the 2021 LRDP EIR.

Discussion

Topics Determined to Have No Impact in the 2021 LRDP EIR

The topic of scenic highways has been screened out from further evaluation in this Addendum because the EIR Study Area is not on or within the viewshed of a State scenic highway.[2] Consequently, there would be no impacts to scenic highways. See Section 7.1.1, *Aesthetics*, of the 2021 LRDP EIR.

Topics Evaluated in the 2021 LRDP EIR

CEQA Section 21099(d)(1), states, "Aesthetic and parking impacts of a residential, mixed-use residential, or employment center project on an infill site within a transit priority area [TPA] shall not be considered significant impacts on the environment."[3] Housing Projects #1 and #2 evaluated in the 2021 LRDP EIR met all of the CEQA Section 21099 criteria because they are (1) in a TPA; (2) on an infill site that has been previously developed within an urban area of the City of Berkeley; and (3) mixed-use projects that include primarily residential uses. Thus, the 2021 LRDP EIR did not consider aesthetics in determining the significance of the impacts of Housing Project #1 and #2 under CEQA.

Figure 5-1, *Priority Development Areas and Transit Priority Areas*, in the 2021 LRDP EIR shows the TPAs in the EIR Study Area. The Proposed Project is an employment-center project on a qualified infill site; therefore, consistent with CEQA Section 21099, no significant aesthetic impacts can be made in this environmental analysis for the Proposed Project. Accordingly, aesthetics is not discussed further in this Addendum. See Section 7.1.1, *Aesthetics*, of the 2021 LRDP EIR.

5.1.2 AGRICULTURE AND FORESTRY RESOURCES

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
Topics Determined to Have No Impact in the 2021 LRDP EIR					
Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	NI		X		

[2] California Department of Transportation California Scenic Highways Program, Scenic Highway System Lists, List of eligible and officially designated State Scenic Highways, https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways, accessed February 28, 2020.

[3] The Governor's Office of Planning and Research, which is the entity charged with developing guidelines to help agencies implement CEQA, has amended the CEQA Guidelines to reflect that parking is no longer considered to be a significant environmental impact. Accordingly, parking adequacy was not evaluated in the 2021 LRDP EIR.

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
Conflict with existing zoning for agricultural use, or a Williamson Act contract?	NI		X		
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))?	NI		X		
Result in the loss of forest land or conversion of forest land to non-forest use?	NI		X		
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?	NI		X		

Key: NI = no impact; LTS = less than significant; LTS/M = less than significant with mitigation; SU = significant and unavoidable

Summary of Analysis

No new significant or more severe impact than analyzed in the 2021 LRDP EIR.

Discussion

Topics Determined to Have No Impact in the 2021 LRDP EIR

The 2021 LRDP EIR did not analyze impacts to agriculture and forestry resources because the EIR Study Area is primarily in an urbanized setting, and approval and implementation of the 2021 LRDP, including the Proposed Project, would have no impact on agriculture and forestry resources. Accordingly, this issue is not discussed further in this Addendum. See Section 7.1.2, *Agricultural and Forestry Resources*, of the 2021 LRDP EIR.

5.1.3 AIR QUALITY

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
Topics Evaluated in the 2021 LRDP EIR					
AIR-1: Conflict with or obstruct implementation of the applicable air quality plan?	SU		X		

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
AIR-2: 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?	SU		X		
AIR-3: Expose sensitive receptors to substantial pollutant concentrations?	SU			X	
AIR-4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	LTS		X		
AIR-5: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact.	LTS		X		

Key: NI = no impact; LTS = less than significant; LTS/M = less than significant with mitigation; SU = significant and unavoidable

Summary of Analysis

No new significant or more severe impact than analyzed in the 2021 LRDP EIR.

Discussion

Topics Evaluated in the 2021 LRDP EIR

AIR-1 and AIR-2: The 2021 LRDP EIR identified a significant and unavoidable impact at the program level regarding consistency with the Bay Area Air Quality Management District's *2017 Clean Air Plan: Spare the Air, Cool the Climate* (2017 Clean Air Plan) because the 2017 Clean Air Plan does not directly account for UC Berkeley's development program. Because the Proposed Project would not result in additional development beyond what was analyzed in the 2021 LRDP EIR, the Proposed Project would not increase the development program analyzed in the 2021 LRDP EIR. The Proposed Project would provide a new building to house UC Berkeley's existing CDSS and would not result in student population at UC Berkeley. Thus, the Proposed Project would not substantially affect housing, employment, or population projections in the region that are the basis of the 2017 Clean Air Plan projections.

The 2021 LRDP EIR identified significant and unavoidable impacts at the program level associated with the generation of fugitive dust, construction equipment exhaust, and reactive organic gases (ROG) emissions during construction and operation of development under the 2021 LRDP. The Proposed Project would not result in additional development beyond what was analyzed in the 2021 LRDP EIR. Construction and operation of the Proposed Project would result in criteria air pollutant emissions. As required by 2021 LRDP EIR Mitigation Measure AIR-2.1, off-road diesel-powered construction equipment with more than 50 horsepower used for the Proposed Project would meet the United States Environmental Protection Agency Tier 4 Final emissions standards or higher, where commercially available. In addition, as required by 2021

LRDP EIR Mitigation Measure AIR-2.2, interior architectural coatings used in the Proposed Project would be low volatile organic compound (VOC) or no-VOC paints. In addition, construction of the Proposed Project would adhere to CBP AIR-2 and CBP AIR-3, which require control measures for fugitive dust control and to reduce emissions of diesel particulate matter and ozone precursors. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

AIR-3: The 2021 LRDP EIR identified a significant and unavoidable impact at the program level associated with construction-related health risks. As required by Mitigation Measure AIR-3.1, a construction health risk assessment (HRA) has been prepared for the Proposed Project (see Appendix B, *Construction Health Risk Assessment*, of this Addendum). In addition, as described above, the Proposed Project would comply with Mitigation Measure AIR-2.1, which requires off-road diesel-powered construction equipment with more than 50 horsepower to meet the United States Environmental Protection Agency Tier 4 Final emissions standards or higher, where commercially available. The construction HRA found that, with mitigation, the Proposed Project would not expose off-site sensitive receptors to substantial concentrations of air pollutant emissions during construction. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

AIR-4: The 2021 LRDP EIR identified a less-than-significant impact associated with the generation of substantial odors that would affect a substantial number of people. The type of facilities that are typically considered to have objectionable odors include wastewater treatment plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. The Proposed Project's uses are not associated with foul odors that constitute a public nuisance. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

AIR-5: The 2021 LRDP EIR identified a less-than-significant cumulative impact for the 2021 LRDP with respect to toxic air contaminants. The cumulative setting for the Proposed Project is buildout under the 2021 LRDP, and the Proposed Project would not result in additional development beyond what was analyzed in the 2021 LRDP EIR. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

5.1.4 BIOLOGICAL RESOURCES

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
Topics Determined to Have No Impact in the 2021 LRDP EIR					
Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	NI		X		
Topics Evaluated in the 2021 LRDP EIR					
BIO-1: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	LTS		X		
BIO-2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	LTS		X		
BIO-3: Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	LTS		X		
BIO-4: 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?	LTS/M		X		
BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	NI		X		
BIO-6: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact?	LTS		X		

Key: NI = no impact; LTS = less than significant; LTS/M = less than significant with mitigation; SU = significant and unavoidable

Summary of Analysis

No new significant or more severe impact than analyzed in the 2021 LRDP EIR.

Discussion

Topics Determined to Have No Impact in the 2021 LRDP EIR

Since the 2021 LRDP was approved and the EIR was certified, no local, regional, or State conservation plans have been approved that encompass the EIR Study Area, including the site of the Proposed Project. Accordingly, no further analysis regarding this standard of significance and the Proposed Project is required, and this issue is not discussed further in this Addendum. See Section 7.1.3, *Biological Resources*, of the 2021 LRDP EIR.

Topics Evaluated in the 2021 LRDP EIR

BIO-1 through BIO-3: The 2021 LRDP EIR identified less-than-significant impacts for the 2021 LRDP with respect to special-status plant species, riparian habitat or other sensitive natural communities, and federally protected wetlands. No special-status plant species, riparian habitat, other sensitive natural communities, or regulated waters occur within the project site due to the extent of past development and its location in an urbanized setting. Furthermore, the Proposed Project would adhere to CBP BIO-1 to avoid disturbance or removal of bird nests protected under the federal Migratory Bird Treaty Act and California Department of Fish and Game Code. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

BIO-4: The 2021 LRDP EIR identified a less-than-significant impact with mitigation concerning movement of wildlife species, wildlife corridors, and native wildlife nursery sites. Given the urbanized location of the Proposed Project, no adverse impacts on wildlife movement opportunities are anticipated. However, the new building proposed could pose the risk of bird collisions. As required by 2021 LRDP EIR Mitigation Measure BIO-4, the proposed building would be designed to minimize the potential risk of bird collisions. The Proposed Project has been designed consistent with the San Francisco Planning Department's Standards for Bird-Safe Buildings and the City of Berkeley's Draft Bird Safe Ordinance. The proposed building design includes medium- and low-reflectivity glass, and glass with acid etch or fritted treatments. The Proposed Project would not include any glass skyways or walkways or freestanding glass walls. Rooftop mechanical equipment would be concealed. Interior lighting would be controlled with an adjustable control system, and exterior lighting would be directed downward and screened. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

BIO-5: The 2021 LRDP EIR identified no conflict with any local policies or ordinances protecting biological resources. The Proposed Project would have no impact in the same regard because UC Berkeley is not subject to local regulations. A specimen melaleuca tree would be removed as part of the Proposed Project, and eight ash trees and seven oak trees would be moved to other locations on the UC Berkeley campus; however, as required through the implementation of CBP BIO-9, the Proposed Project would comply with the Campus Specimen Tree Program and the Campus Design Standards, which protect sensitive habitat, trees, and waterways on the UC Berkeley campus. Specifically, implementation of CBP BIO-9 requires replacement landscaping where specimen resources are adversely affected, either through salvage and transplanting of existing trees or shrubs or through new horticulturally appropriate replacement plantings,

as directed by the Campus Landscape Architect. Furthermore, the Proposed Project would also adhere to CBP BIO-10 for the implementation of the recommendations of the Landscape Master Plan and subsequent updates; project-specific design guidelines to improve the important open space characteristics and resilience of the Campus Park; and CBP BIO-11's requirement for routine maintenance of trees and other vegetation. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

BIO-6: The 2021 LRDP EIR identified a less-than-significant cumulative impact for the 2021 LRDP with respect to biological resources. The cumulative setting for the Proposed Project is buildout under the 2021 LRDP, and the Proposed Project would not result in additional development beyond what was analyzed in the 2021 LRDP EIR. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

5.1.5 CULTURAL RESOURCES

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
Topics Evaluated in the 2021 LRDP EIR					
CUL-1: Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	SU		X		
CUL-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	LTS/M		X		
CUL-3: Disturb any human remains, including those interred outside of formal cemeteries?	LTS		X		
CUL-4: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact?	SU		X		

Key: NI = no impact; LTS = less than significant; LTS/M = less than significant with mitigation; SU = significant and unavoidable

Summary of Analysis

No new significant or more severe impact than analyzed in the 2021 LRDP EIR.

Discussion

Topics Evaluated in the 2021 LRDP EIR

CUL-1: The 2021 LRDP EIR identified a significant and unavoidable impact at the program level for the 2021 LRDP regarding substantial adverse change in the significance of a historical resource. Because of the programmatic nature of the 2021 LRDP, future projects could result in the demolition of one or more

historical resources and/or modification of one or more historical resources in a manner not in conformance with the Secretary of the Interior's Standards for Rehabilitation. The project site was previously occupied by Tolman Hall, which was not eligible for listing on the California or National Registers, but was vacated and demolished in 2018 due to its poor seismic performance rating. The project site is currently vacant; therefore, there would be no impacts to any historical resources. Furthermore, implementation of 2021 LRDP EIR Mitigation Measure CUL-1.1e would ensure that construction vibration does not negatively affect any nearby historic structures. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

CUL-2: The 2021 LRDP EIR identified a less-than-significant impact with mitigation concerning archaeological resources. The archaeological sensitivity analysis for the 2021 LRDP EIR identified 55 percent of the Campus Park as moderately to extremely sensitive.[4] Therefore, soils beneath the project site could contain potentially significant prehistoric archaeological resources, which the Proposed Project has the potential to disturb. As required by 2021 LRDP EIR Mitigation Measure CUL-2, the Proposed Project would implement control measures during ground-disturbing activities to ensure that potential impacts to archaeological resources will be less than significant. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

CUL-3: The 2021 LRDP EIR identified a less-than-significant impact with respect to the disturbance of human remains. Though ground-disturbing activities, such as site grading and trenching for utilities, have the potential to disturb human remains interred outside of formal cemeteries, the Proposed Project would adhere to CBP CUL-1, under which any human remains encountered during ground-disturbing activities would be required to be treated in accordance with California Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98, and the California Code of Regulations Section 15064.5(e) (CEQA). Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

CULT-4: The 2021 LRDP EIR identified a significant and unavoidable cumulative impact for the 2021 LRDP with respect to cultural resources. The cumulative setting for the Proposed Project is buildout under the 2021 LRDP, and the Proposed Project would not result in additional development beyond what was analyzed in the 2021 LRDP EIR. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

[4] University of California Berkeley, July 2021, UC Berkeley 2021 Long Range Development Plan and Housing Projects #1 and #2 Environmental Impact Report, State Clearinghouse No. 2020040078, page 5.4-14.

5.1.6 ENERGY

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
Topics Evaluated in the 2021 LRDP EIR					
ENE-1: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	LTS		X		
ENE-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	NI		X		
ENE-3: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact?	LTS		X		

Key: NI = no impact; LTS = less than significant; LTS/M = less than significant with mitigation; SU = significant and unavoidable

Summary of Analysis

No new significant or more severe impact than analyzed in the 2021 LRDP EIR.

Discussion

Topics Evaluated in the 2021 LRDP EIR

ENE-1 and ENE-2: The 2021 LRDP EIR identified a less-than-significant impact at the program level for the 2021 LRDP regarding wasteful, inefficient, or unnecessary consumption of energy resources, and no impacts concerning conflicts with State or local plans for renewable energy or energy efficiency. The Proposed Project would comply with the University of California Sustainable Practices Policy, and the building would be designed to achieve or exceed the U.S. Green Building Council's LEED™ Gold certification. The Proposed Project would incorporate electrification and would not use natural gas for building heat or hot water generation, to comply with the fossil-fuel-free provision of the Sustainable Practices Policy. During construction, the Proposed Project would use a combination of gas- or diesel-powered and electric equipment. Transportation energy use during construction would come from the transport and use of construction equipment, delivery vehicles and haul trucks, and construction employee vehicles that use diesel fuel and/or gasoline. Overall, use of all construction equipment would cease upon completion of project construction. Thus, impacts related to electricity and transportation fuel use during construction would be temporary and would not require expanded energy supplies or the construction of new infrastructure. Furthermore, to limit wasteful and unnecessary energy consumption, the construction contractors would minimize nonessential idling of construction equipment, in accordance with Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9, and as required by CBP AIR-3. Such required practices would limit wasteful and unnecessary energy consumption during construction.

Electrical service to the Proposed Project would be provided by Pacific Gas and Electric Company through connections to existing off-site electrical lines and new on-site infrastructure. Although the Proposed Project would result in an increase in electricity demand, it would include project design features to minimize energy demand to the extent feasible. The Proposed Project would, at minimum, comply with the current Building Energy Efficiency Standards and the California Green Building Standards Code (CALGreen). In addition, the Proposed Project proposes to obtain a minimum LEED™ Gold rating.[5] Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

ENE-3: The 2021 LRDP EIR identified a less-than-significant cumulative impact for the 2021 LRDP with respect to energy. The cumulative setting for the Proposed Project is buildout under the 2021 LRDP, and the Proposed Project would not result in additional development beyond what was analyzed in the 2021 LRDP EIR. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

5.1.7 GEOLOGY AND SOILS

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
Topics Determined to Have No Impact in the 2021 LRDP EIR					
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?	NI		X		
Topics Evaluated in the 2021 LRDP EIR					
GEO-1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: a) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. b) Strong seismic ground shaking? c) Seismic-related ground failure, including liquefaction? d) Landslides?	LTS		X		

[5] Leadership in Energy and Environmental Design or LEED provides a framework for healthy, efficient, carbon and cost-saving green buildings. LEED certified buildings save money, improve efficiency, lower carbon emissions and create healthier places for people.

Would the Proposed Project:

Environmental Issues		Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
			New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
GEO-2:	Result in substantial soil erosion or the loss of topsoil?	LTS		X		
GEO-3:	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?	LTS		X		
GEO-4:	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?	LTS		X		
GEO-5:	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	LTS/M		X		
GEO-6:	In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact?	LTS		X		

Key: NI = no impact; LTS = less than significant; LTS/M = less than significant with mitigation; SU = significant and unavoidable

Summary of Analysis

No new significant or more severe impact than analyzed in the 2021 LRDP EIR.

Discussion

Topics Determined to Have No Impact in the 2021 LRDP EIR

The topic of alternative wastewater disposal systems has been screened out from further evaluation because the potential future development under the 2021 LRDP, including the Proposed Project, would not include the use of septic tanks or alternative wastewater disposal systems. Therefore, no impact would occur regarding soil capability to adequately support the use of septic tanks or alternative wastewater disposal systems, and this issue is not discussed further in this Addendum. See Section 7.1.4, *Geology and Soils*, of the 2021 LRDP EIR.

Topics Evaluated in the 2021 LRDP EIR

GEO-1 though GEO-4: The 2021 LRDP EIR identified less-than-significant impacts at the program level for the 2021 LRDP with respect to the creation or exacerbation of fault rupture, earthquake ground shaking, liquefaction and related ground failure, and landslides; substantial soil erosion; location on an unstable geologic unit; or location on expansive soil. The project site is not subject to landslide hazards, and the probability of subsidence impacts is generally low due to the generally uniform vertical movement in the

area surrounding the project site. The project site is located in an urbanized part of the City of Berkeley and would be required to implement construction phase best management practices (BMPs) as well as post-construction site design, source-control, and treatment control measures in accordance with applicable permit requirements, such as low-impact development (LID) measures. The Proposed Project would adhere to CBP GEO-1 through CBP GEO-4 and CBP GEO-6 through CBP GEO-8. These CBPs require compliance with the California Building Code (CBC) and the UC Seismic Safety Policy; incorporation of recommendations for geotechnical hazard prevention in required site-specific geotechnical studies; review of all seismic and structural engineering designs; use of site-specific seismic ground motions for analysis and design; and implementation of programs and projects in emergency planning, training, response, and recovery. Furthermore, the Proposed Project would be required to comply with the Campus Design Standards, which contain regulatory and other requirements for construction-phase and post-construction stormwater management to reduce erosion, as described in CBP GEO-9.

The expansion potential of the clay soils in the 2021 LRDP EIR Study Area varies from low to critically high.[6] Therefore, the Proposed Project has potential to expose people to hazards associated with expansive soils. However, such impacts would be avoided through compliance with the CBC and the University of California Seismic Safety Policy and with review by the Seismic Review Committee, as required by CBP GEO-1 and CBP GEO-3. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

GEO-5: The 2021 LRDP EIR identified a less-than-significant impact with mitigation concerning paleontological resources. The project site is previously developed, which contributes to the low likelihood of unearthing a paleontological resource. The project site is located on the Franciscan Assemblage, which is a highly sensitive geologic formation where fossils could potentially be found. As required by 2021 LRDP EIR Mitigation Measure GEO-5, UC Berkeley would provide a paleontological resources awareness training program to all construction personnel active on the project site during earth-moving activities. Furthermore, the Proposed Project would adhere to the procedures in CBP GEO-10, to be followed in the event that a unique paleontological resource is discovered. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

GEO-6: The 2021 LRDP EIR identified a less-than-significant cumulative impact for the 2021 LRDP with respect to geology and soils. The cumulative setting for the Proposed Project is buildout under the 2021 LRDP, and the Proposed Project would not result in additional development beyond what was analyzed in the 2021 LRDP EIR. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

[6] University of California Berkeley, July 2021, UC Berkeley 2021 Long Range Development Plan and Housing Projects #1 and #2 Environmental Impact Report, State Clearinghouse No. 2020040078, page 5.6-33.

5.1.8 GREENHOUSE GAS EMISSIONS

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
Topics Evaluated in the 2021 LRDP EIR					
GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	LTS		X		
GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	LTS/M			X	
GHG-3: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact?	LTS		X		

Key: NI = no impact; LTS = less than significant; LTS/M = less than significant with mitigation; SU = significant and unavoidable

Summary of Analysis

No new significant or more severe impact than analyzed in the 2021 LRDP EIR.

Discussion

Topics Evaluated in the 2021 LRDP EIR

GHG-1: The 2021 LRDP EIR identified less-than-significant impacts at the program level for the 2021 LRDP regarding the generation of greenhouse gas (GHG) emissions. Construction and operation of the Proposed Project would generate an increase in GHG emissions from transportation sources (passenger vehicles, trucks, delivery vehicles), water use and wastewater generation, and solid waste generation. GHG emissions associated with the Proposed Project are included in the 2021 LRDP emissions forecast, which was determined not to contribute a significant amount of GHG emissions or contribute to existing cumulative emissions impacts. Furthermore, UC Berkeley conducts annual GHG emissions inventories and implements the University of California Office of the President and UC Berkeley sustainability and policy initiative, which would apply to the Proposed Project. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

GHG-2: The 2021 LRDP EIR identified less-than-significant impacts with mitigation concerning conflict with applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions. Such plans include California Air Resources Board's Scoping Plan outlining the State's strategies to reduce GHG emissions in accordance with the targets established under Assembly Bill (AB) 32 and Senate Bill (SB) 32, as well as Metropolitan Transportation Commission/Association of Bay Area Governments' Plan Bay Area 2040 to achieve the passenger vehicle emissions reductions identified under SB 375. New buildings are required to comply with the current Building Energy Efficiency Standards and CALGreen as well as the statewide

strategies to reduce GHG emissions. Because the Proposed Project includes only one parking stall (for electric vehicle charging), site users would access the site through nonvehicular modes of transportation. Vehicle trips would be limited to delivery and maintenance vehicles; therefore, the Proposed Project would generate minimal new vehicle trips to the project site. In addition, as described in Section 4.3, *Development Program Consistency*, the Proposed Project would provide a new building to house UC Berkeley's existing CDSS and would not result in student or employment population growth at UC Berkeley. As such, the UC Berkeley campus population would remain within levels analyzed in the 2021 LRDP EIR and the Proposed Project would not be a significant growth-inducing project. Thus, it would be consistent with the overall goals of Plan Bay Area 2040 in concentrating new development in locations where there is existing infrastructure. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

GHG-3: The 2021 LRDP EIR identified a less-than-significant cumulative impact for the 2021 LRDP with respect to GHG emissions. The cumulative setting for the Proposed Project is buildout under the 2021 LRDP, and the Proposed Project would not result in additional development beyond what was analyzed in the 2021 LRDP EIR. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

5.1.9 HAZARDS AND HAZARDOUS MATERIALS

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
Topics Determined to Have No Impact in the 2021 LRDP EIR					
For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area?	NI		X		
Topics Evaluated in the 2021 LRDP EIR					
HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	LTS		X		
HAZ-2: 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?	LTS		X		
HAZ-3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	LTS		X		

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
HAZ-4: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	LTS			X	
HAZ-5: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	LTS		X		
HAZ-6: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact?	LTS		X		
*Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	*See Section 4.1.20, Wildfire, of this Addendum*				

Key: NI = no impact; LTS = less than significant; LTS/M = less than significant with mitigation; SU = significant and unavoidable
* Note: Impacts related to exposing people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires are fully discussed in the Draft EIR in Chapter 5.18, Wildfire, and in this Addendum in Section 5.1.20, Wildfire. Therefore, this standard is not discussed in this section.

Summary of Analysis

No new significant or more severe impact than analyzed in the 2021 LRDP EIR.

Discussion

Topics Determined to Have No Impact in the 2021 LRDP EIR

The topic of airport-related hazards has been screened out from further evaluation because the EIR Study Area is not within an airport land use plan or within two miles of an airport. The nearest public airport is the Oakland International Airport, roughly ten miles south of the planning area. Therefore, no impact would occur regarding hazards related to the Proposed Project's location within an airport land use plan area or within two miles of a public airport or public use airport. Consequently, this issue is not discussed further in this Addendum. See Section 7.1.5, *Hazards and Hazardous Materials*, of the 2021 LRDP EIR.

Topics Evaluated in the 2021 LRDP EIR

HAZ-1 through HAZ-4: The 2021 LRDP EIR identified less-than-significant impacts at the program level for the 2021 LRDP with respect to the hazards associated with the use, handling, disposal, and release of hazardous materials. The closest sensitive receptors to the Proposed Project are the multifamily residential buildings immediately north of the Proposed Project on Hearst Avenue. Other sensitive receptors within

1,000 feet of the site are the students at the Montessori Family School at 1850 Scenic Avenue to the northeast of the Proposed Project, as well as residences to the north, northeast, and west of the Proposed Project. These receptor locations could be potentially exposed to hazardous materials from the proposed construction and operation of the Proposed Project.

Construction activities for the Proposed Project would include the use of materials such as fuels, lubricants, and greases in construction equipment and coatings. The potential exists for these materials to spill or to create hazardous conditions. However, the materials used would not be in such quantities or stored in such a manner as to pose a significant safety hazard to nearby sensitive receptors, including the Montessori Family School, which is within one-quarter mile of the project site. Fugitive dust would be generated primarily from ground-disturbing and material-loading activities in addition to vehicles traveling over unpaved surfaces. However, fugitive dust associated with construction activities would not expose off-site sensitive receptors to substantial concentrations of air pollutants (see Appendix B, *Construction Health Risk Assessment*, of this Addendum). To prevent hazardous conditions, existing UC Berkeley, State, and federal laws would be enforced at the construction site. Furthermore, these activities would also be short term or one time in nature and would cease upon completion of the construction phases for the Proposed Project.

Operation of the Proposed Project would involve the use of small amounts of hazardous materials, such as cleansers, paints, fertilizers, and pesticides, for cleaning and maintenance purposes. Concurrent with an increase in laboratory and other research facility space would be a potential increase in the use of hazardous materials and chemicals, biohazardous materials, radioactive materials, transgenic material, and production of wastes associated with laboratory research activities. However, hazardous materials stored and handled on the UC Berkeley campus would not exist in quantities sufficient to pose a risk to occupants of nearby sensitive receptors including the Montessori Family School, which is within one-quarter mile of the project site, in case of an accidental release, and a risk management plan would be prepared in accordance with the State of California's Accidental Release Prevention program requirements, if necessary. Additionally, the use, storage, transport, and disposal of hazardous materials would be governed by existing regulations of several agencies, including the Environmental Protection Agency, Department of Toxic Substances Control, U.S. Department of Transportation, International Air Transport Association, California Division of Occupational Safety and Health, and UC Berkeley Office of Environmental Health & Safety programs and policies.

The Proposed Project would adhere to CBP HAZ-1, which requires the continued implementation of equivalent health and safety plans, programs, practices, and procedures related to the use, storage, disposal, or transportation of hazardous materials and wastes.

The project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and would result in no impact to the public or the environment. Regardless, the Proposed Project would adhere to CBP HAZ-5, and UC Berkeley would perform a site history and due diligence assessment of the project site where ground-disturbing construction is proposed, to assess the potential for soil and groundwater contamination resulting from past or current site land uses at the site or in the vicinity. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

HAZ-5: The 2021 LRDP EIR identified less-than-significant impacts concerning adopted emergency response plans or emergency evacuation plans. The Proposed Project would be required to comply with the provisions of the California Fire Code (CFC) and the CBC, which would ensure that building and life safety measures are incorporated into the Proposed Project and would facilitate implementation of emergency response plans. During construction, the Proposed Project would be required to comply with all applicable provisions of the CFC to ensure fire safety during the construction phase. The Proposed Project would not involve physical components that would interfere with the ability of UC Berkeley, the City of Berkeley, Alameda County, or emergency response service providers to implement emergency response activities within the project site or vicinity. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

HAZ-6: The 2021 LRDP EIR identified a less-than-significant cumulative impact for the 2021 LRDP with respect to hazards and hazardous materials. The cumulative setting for the Proposed Project is buildout under the 2021 LRDP, and the Proposed Project would not result in additional development beyond what was analyzed in the 2021 LRDP EIR. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

5.1.10 HYDROLOGY AND WATER QUALITY

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
Topics Evaluated in the 2021 LRDP EIR					
HYD-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	LTS		X		
HYD-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	LTS		X		

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
HYD-3: 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: a) Result in substantial erosion or siltation on- or off-site? b) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; c) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or d) Impede or redirect flood flows?	LTS		X		
HYD-4: In flood, hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	LTS		X		
HYD-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	LTS		X		
HYD-6: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact?	LTS		X		

Key: NI = no impact; LTS = less than significant; LTS/M = less than significant with mitigation; SU = significant and unavoidable

Summary of Analysis

No new significant or more severe impact than analyzed in the 2021 LRDP EIR.

Discussion

Topics Evaluated in the 2021 LRDP EIR

HYD-1 through HYD-5: The 2021 LRDP EIR identified less-than-significant impacts at the program level for the 2021 LRDP with respect to hydrology and water quality. Because the Proposed Project would involve the disturbance of more than one acre of land, it would be required to comply with the requirements of the Construction General Permit, which includes submitting Permit Registration Documents to the State Water Resources Control Board and preparing and implementing a Stormwater Pollution Prevention Plan that includes measures to reduce the potential for erosion, siltation, and pollutants to enter the storm drain

system. The UC Berkeley Office of Environment, Health & Safety (EH&S) or a designated third party would also verify that the Proposed Project complies with all applicable requirements and BMPs.

The Proposed Project's stormwater management strategy is designed to manage runoff and treat and remove pollutants prior to discharge. Furthermore, East Bay Municipal Utility District (EBMUD) does not use groundwater for water supply, and therefore implementation of the project would not decrease groundwater supplies. The groundwater basin that extends under the project site is not currently the local water supply and does not serve local or planned land uses. The proposed site is not in a 100-year floodplain or within a dam or tsunami inundation zone.

Construction dewatering would be required for the Proposed Project due to the presence of shallow groundwater. The effects of dewatering are temporary in nature and would not substantially interfere with groundwater recharge nor contribute to the lowering of the local groundwater table. No issues regarding contaminated soil or groundwater have been reported at the site. However, a dewatering plan must be submitted by the contractor and approved by UC Berkeley EH&S and Facilities Services offices prior to the start of construction to ensure that all disposal of water is in accordance with State and local regulations.

The Proposed Project would adhere to CBP HYD-1 through CBP HYD-5, CBP HYD-7, CBP HYD-8, and CBP HYD-13. In implementing these CBPs, UC Berkeley reviews each development project to determine whether project runoff would affect rainwater infiltration to groundwater or increase pollutant loading and verify that the Proposed Project complies with all applicable requirements and BMPs. UC Berkeley also continues to manage runoff into storm drain systems to avoid no net increase in runoff over existing conditions, and maintains a campuswide educational program regarding safe use and disposal of facilities maintenance chemicals and laboratory chemicals to prevent the discharge of these pollutants. Dewatering would be monitored and maintained by qualified engineers in compliance with the Campus Design Standards and applicable regulations. Additionally, landscaped areas of the project site would be designed to absorb runoff from rooftops and walkways.

Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

HYD-6: The 2021 LRDP EIR identified a less-than-significant cumulative impact for the 2021 LRDP with respect to hydrology and water quality. The cumulative setting for the Proposed Project is buildout under the 2021 LRDP, and the Proposed Project would not result in additional development beyond what was analyzed in the 2021 LRDP EIR. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

5.1.11 LAND USE AND PLANNING

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
Topics Evaluated in the 2021 LRDP EIR					
LU-1: Physically divide an established community?	LTS		X		
LU-2: Cause a significant environmental impact due to a conflict with any land use plan, or policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	LTS		X		
LU-3: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact?	LTS		X		

Key: NI = no impact; LTS = less than significant; LTS/M = less than significant with mitigation; SU = significant and unavoidable

Summary of Analysis

No new significant or more severe impact than analyzed in the 2021 LRDP EIR.

Discussion

Topics Evaluated in the 2021 LRDP EIR

LU-1: The 2021 LRDP EIR identified less-than-significant impacts at the program level for the 2021 LRDP with respect to established communities. The Proposed Project would be an infill development within the Campus Park and would not change the layout of existing roadways or create features that would divide established communities. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

LU-2: The 2021 LRDP EIR identified less-than-significant impacts concerning conflict with any land use plan, or policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. UC Berkeley is constitutionally exempt from local regulations whenever using property under its control in furtherance of its educational mission. The Proposed Project is consistent with the land uses and intensities of development contemplated in the 2021 LRDP, which prioritizes development sites on the Campus Park for academic and research space. Moreover, the Proposed Project would support 2021 LRDP goals by providing a range of adaptable and multipurpose spaces required to promote excellence and leadership in teaching, research, and public service; enhancing the connectivity between UC Berkeley and surrounding areas through continued support of community partnerships and public programming in areas of shared interest; and by designing UC Berkeley campus edges and UC Berkeley–owned properties in the community with consideration of non-UC Berkeley properties. Furthermore, the Proposed Project would adhere to CBP LU-1, which requires new projects in the Campus Park to conform to the Physical Design Framework.

Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

LU-3: The 2021 LRDP EIR identified a less-than-significant cumulative impact for the 2021 LRDP with respect to land use and planning. The cumulative setting for the Proposed Project is buildout under the 2021 LRDP, and the Proposed Project would not result in additional development beyond what was analyzed in the 2021 LRDP EIR. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

5.1.12 MINERAL RESOURCES

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
Topics Determined to Have No Impact in the 2021 LRDP EIR					
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?	NI		X		
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?	NI		X		

Key: NI = no impact; LTS = less than significant; LTS/M = less than significant with mitigation; SU = significant and unavoidable

Summary of Analysis

No new significant or more severe impact than analyzed in the 2021 LRDP EIR.

Discussion

Topics Determined to Have No Impact in the 2021 LRDP EIR

The 2021 LRDP EIR did not analyze impacts to mineral resources because there are no areas in the EIR Study Area, including the project site, with development potential that contain mineral resources where there is adequate information indicating significant mineral deposits or the high likelihood of significant mineral deposits. Accordingly, this issue is not discussed further in this Addendum. See Section 7.1.6, *Mineral Resources*, of the 2021 LRDP EIR.

5.1.13 NOISE

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
Topics Determined to Have No Impact in the 2021 LRDP EIR					
For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	NI		X		
Topics Evaluated in the 2021 LRDP EIR					
NOI-1: Generate 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?	SU		X		
NOI-2: Generate excessive groundborne vibration or groundborne noise levels?	LTS/M		X		
NOI-3: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact?	SU		X		

Key: NI = no impact; LTS = less than significant; LTS/M = less than significant with mitigation; SU = significant and unavoidable

Summary of Analysis

No new significant or more severe impact than analyzed in the 2021 LRDP EIR.

Discussion

Topics Determined to Have No Impact in the 2021 LRDP EIR

The topic of airport-related noise has been screened out from further evaluation because the EIR Study Area is not within two miles of an airport. The nearest public airport is the Oakland International Airport, roughly ten miles south of the planning area. Therefore, no impact would occur regarding noise hazards due to proximity to airports. Consequently, this issue is not discussed further in this Addendum. See Section 7.1.7, *Noise*, of the 2021 LRDP EIR.

Topics Evaluated in the 2021 LRDP EIR

NOI-1: The 2021 LRDP EIR identified significant and unavoidable impacts at the program level for the 2021 LRDP with respect to ambient noise levels because construction activities associated with potential future projects may occur near noise-sensitive receptors, and noise disturbances may occur for prolonged periods or during the more sensitive nighttime hours or may exceed UC Berkeley's adopted construction noise

standards, even with project-level mitigation. Two types of short-term noise impacts could occur during construction of the Proposed Project: (1) mobile-source noise from the transport of workers, material deliveries, and debris/soil hauling and (2) stationary-source noise from use of construction equipment. The transport of workers and materials to and from the construction site would incrementally increase noise levels along local roadways. Anticipated construction equipment would include, but is not limited to, saws, tractors, backhoes, loaders, generators, compressors, plate compactors, sweepers, dewatering pumps, cranes, forklifts, tiedown drill rigs, welding machines, scissor lifts, spray-on fireproofing equipment, and personnel hoists. Construction of the Proposed Project would temporarily increase the noise level of the ambient noise environment and would have the potential to affect noise-sensitive land uses in the vicinity of the project site. As required by 2021 LRDP EIR Mitigation Measure NOI-1, the Proposed Project would include temporary noise barriers to reduce construction noise levels.

Similar to the construction phase, two types of noise impacts could occur during operation of the Proposed Project: (1) mobile-source noise from vehicles traveling to and from the Proposed Project (from visitors and deliveries) and (2) stationary-source noise from people and equipment on the project site. Based on the program-level traffic noise analysis conducted for the 2021 LRDP EIR, traffic noise along Hearst Avenue east of Shattuck Avenue is anticipated to increase up to 0.4 dBA (A-weighted decibels),[7] well under the 1.5 dBA threshold—identified in the 2021 LRDP EIR as the minimum level of noise increase considered to represent a significant impact, depending on the ambient noise environment.[8] Traffic noise increases associated with the operation of the Proposed Project are expected to be minimal because the Proposed Project includes only one vehicular parking space.

Regarding stationary noise sources, the Proposed Project would adhere to CBP NOI-1, which requires mechanical equipment selection and building design shielding to be used as appropriate so that noise levels from building operations would not exceed the limits of the City of Berkeley Noise Ordinance. The Proposed Project would also adhere to CBP NOI-2, which lists required measures to be implemented for all construction projects to minimize site disruptions. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

NOI-2: The 2021 LRDP EIR identified less-than-significant impacts with mitigation concerning groundborne vibration levels associated with construction. Vibration generated by construction equipment has the potential to damage or annoy nearby receptors. As required by 2021 LRDP EIR Mitigation Measure NOI-2, the Proposed Project would implement steps concerning the use of vibration-causing construction activities/equipment and, depending on construction activity/equipment and distances to receptors, would implement alternative methods/equipment and a construction vibration monitoring program, as required. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

[7] University of California Berkeley, July 2021, UC Berkeley 2021 Long Range Development Plan and Housing Projects #1 and #2 Environmental Impact Report, State Clearinghouse No. 2020040078, Table 5.11-11, page 5.11-27.

[8] University of California Berkeley, July 2021, UC Berkeley 2021 Long Range Development Plan and Housing Projects #1 and #2 Environmental Impact Report, State Clearinghouse No. 2020040078, page 5.11-26.

NOI-3: The 2021 LRDP EIR identified a significant and unavoidable cumulative impact for the 2021 LRDP with respect to noise. The cumulative setting for the Proposed Project is buildout under the 2021 LRDP, and the Proposed Project would not result in additional development beyond what was analyzed in the 2021 LRDP EIR. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

5.1.14 POPULATION AND HOUSING

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
Topics Evaluated in the 2021 LRDP EIR					
POP-1: Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	LTS/M			X	
POP-2: Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	LTS/M				X
POP-3: In combination with past, present, and reasonably foreseeable projects, result in significant cumulative impacts?	LTS		X		

Key: NI = no impact; LTS = less than significant; LTS/M = less than significant with mitigation; SU = significant and unavoidable

Summary of Analysis

No new significant or more severe impact than analyzed in the 2021 LRDP EIR.

Discussion

Topics Evaluated in the 2021 LRDP EIR

POP-1 and POP-2: The 2021 LRDP EIR identified less-than-significant impacts with mitigation at the program level for the 2021 LRDP with respect to unplanned population growth and displacement of people and housing. The Proposed Project includes research laboratories, offices, meeting rooms, classrooms, a public café, a gallery, and an event space. It is planned for nonresidential uses and does not involve new homes or businesses. The project site is currently undeveloped, and the Proposed Project would not displace people or housing because the existing project site does not house any residents. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

POP-3: The 2021 LRDP EIR identified a less-than-significant cumulative impact for the 2021 LRDP with respect to population and housing. The cumulative setting for the Proposed Project is buildout under the

2021 LRDP, and the Proposed Project would not result in additional development beyond what was analyzed in the 2021 LRDP EIR. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

5.1.15 PUBLIC SERVICES

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
Topics Evaluated in the 2021 LRDP EIR					
PS-1: Result in substantial adverse physical impacts associated with the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police services?	LTS		X		
PS-2: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact to police services?	LTS		X		
PS-3: Result in substantial adverse physical impacts associated with the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services?	LTS		X		
PS-4: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact to fire protection services?	LTS		X		
PS-5: Result in substantial adverse physical impacts associated with the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives for school services?	LTS		X		
PS-6: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact to schools?	LTS		X		
PS-7: In order to maintain acceptable service ratios or other performance objectives, the Proposed Project would result in the provision of or need for new or physically altered library facilities, the construction or operation of which could cause significant environmental impacts?	LTS		X		

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
PS-8: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact to public services?	LTS		X		

Key: NI = no impact; LTS = less than significant; LTS/M = less than significant with mitigation; SU = significant and unavoidable

Summary of Analysis

No new significant or more severe impact than analyzed in the 2021 LRDP EIR.

Discussion

Topics Evaluated in the 2021 LRDP EIR

PS-1, PS-3, PS-5, and PS-7: The primary purpose of the public services impact analysis is to examine the impacts associated with physical improvements to public service facilities required to maintain acceptable service ratios, response times, or other performance objectives. Public service facilities need improvements (i.e., construction, renovation, or expansion) as demand for services increases. Increased demand is typically driven by increases in population. A project would have a significant environmental impact if it would exceed the ability of public service providers to adequately serve the population, thereby requiring construction of new facilities or modification of existing facilities.

The 2021 LRDP EIR identified less-than-significant impacts at the program level for the 2021 LRDP with respect to public services. The Proposed Project would accommodate a daytime population that would represent a more intense use of the project site when compared to its existing undeveloped state. As described in Section 4.3, *Development Program Consistency*, the Proposed Project would provide a new building to house UC Berkeley's existing CDSS and would not result in student or employment population growth at UC Berkeley. As such, the UC Berkeley campus population would remain within levels analyzed in the 2021 LRDP EIR. Accordingly, the Proposed Project would not require the construction, renovation, or expansion of police services, fire protection services, school services, or library facilities in the project area. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

PS-2, PS-4, PS-6, and PS-8: The 2021 LRDP EIR identified less-than-significant cumulative impacts for the 2021 LRDP with respect to public services. The cumulative setting for the Proposed Project is buildout under the 2021 LRDP, and the Proposed Project would not result in additional development beyond what was analyzed in the 2021 LRDP EIR. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

5.1.16 PARKS AND RECREATION

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
Topics Evaluated in the 2021 LRDP EIR					
REC-1: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered parks facilities, need for new or physically altered parks facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for parks services?	LTS		X		
REC-2: 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?	LTS		X		
REC-3: Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	LTS		X		
REC-4: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact related to parks and recreation?	LTS		X		

Key: NI = no impact; LTS = less than significant; LTS/M = less than significant with mitigation; SU = significant and unavoidable

Summary of Analysis

No new significant or more severe impact than analyzed in the 2021 LRDP EIR.

Discussion

Topics Evaluated in the 2021 LRDP EIR

REC-1 through REC-3: The 2021 LRDP EIR identified less-than-significant impacts at the program level for the 2021 LRDP with respect to parks and recreational facilities. The Proposed Project does not involve housing that would induce population growth and would not remove any existing parks or recreational space. Therefore, implementation of the Proposed Project is not anticipated to create a need for new or altered parks or recreational facilities or increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration would occur or be accelerated. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

REC-4: The 2021 LRDP EIR identified a less-than-significant cumulative impact for the 2021 LRDP with respect to parks and recreation. The cumulative setting for the Proposed Project is buildout under the 2021 LRDP, and the Proposed Project would not result in additional development beyond what was analyzed in the 2021 LRDP EIR. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

5.1.17 TRANSPORTATION

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
Topics Evaluated in the 2021 LRDP EIR					
TRAN-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	LTS/M			X	
TRAN-2: Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	LTS		X		
TRAN-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	SU			X	
TRAN-4: Result in inadequate emergency access?	LTS		X		
TRAN-5: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact?	SU		X		

Key: NI = no impact; LTS = less than significant; LTS/M = less than significant with mitigation; SU = significant and unavoidable

Summary of Analysis

No new significant or more severe impact than analyzed in the 2021 LRDP EIR.

Discussion

Topics Evaluated in the 2021 LRDP EIR

TRAN-1: The 2021 LRDP EIR identified less-than-significant impacts with mitigation at the program level for the 2021 LRDP with respect to conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. The Proposed Project would be an infill development within the Campus Park and would not result in an increase to the UC Berkeley campus population. Furthermore, the Proposed Project would adhere to CBP TRAN-1 by ensuring bicycle, pedestrian, and transit access to the Proposed Project. Additionally, UC Berkeley will implement CBP TRAN-4 by working with the City of Berkeley, AC Transit, and BART to coordinate transit access to the new

academic building. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

TRAN-2: Pursuant to CEQA Guidelines Section 15064.3(b)(1), projects within half a 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. Accordingly, the 2021 LRDP EIR did not evaluate impacts for projects within this screening distance. Due to its location within half a mile of the Downtown Berkeley BART station and a TPA, transportation impacts related to vehicle miles traveled (VMT) from the Proposed Project are presumed to be less than significant. Accordingly, no quantified VMT analysis is presented in this Addendum. See Section 7.1.8, *Transportation*, of the 2021 LRDP EIR.

TRAN-3: The 2021 LRDP EIR identified significant and unavoidable impacts in regard to hazards due to a geometric design feature or incompatible uses because of the unknowns of future buildings and structures at the time of analysis. The Proposed Project would be an infill development within the Campus Park and therefore would not introduce an incompatible use with the potential to create a transportation hazard. The Proposed Project modifications in the City of Berkeley public right-of-way would include undergrounding of public utilities along Hearst Avenue and relocation of a street traffic signal pole. The Proposed Project also proposes circulation improvements on the Campus Park, including pedestrian route improvements and an extensive new network of accessible routes around the building, which would be designed and constructed based on the applicable design standards and guidelines so as not to substantially increase hazards due to a geometric design feature related to roadway or sidewalks.

The 2021 LRDP EIR identifies a significant impact associated with pedestrian (ground) level wind hazards for new buildings that are 100 feet or more in height and includes Mitigation Measure TRAN-3 requiring a wind hazards analysis for buildings of this height. Along the Hearst Avenue frontage, the building would rise to approximately 87 feet on average and the highest height of the building rooftop would be no more than 91 feet from the ground; therefore, no mitigation is required.

Furthermore, the Proposed Project would adhere to CBP TRAN-5 through CBP TRAN-8, which require UC Berkeley to reimburse the City of Berkeley for its fair share of costs associated with damage to city streets from UC Berkeley construction activities; manage project schedules to minimize the overlap of excavation or other heavy truck activity periods that have the potential to combine impacts on traffic loads and street system capacity; and require contractors working on major new construction or major renovation projects to develop and implement a Construction Traffic Management Plan.

Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

TRAN-4: The 2021 LRDP EIR identified less-than-significant impacts concerning inadequate emergency access. The Proposed Project would provide emergency vehicle access along University House Way, Hearst Avenue, Macfarlane Lane, Morgan Bikeway, and portions of Bayard Rustin Way. The Proposed Project would include widened and reinforced paths and a turnaround to accommodate emergency vehicles. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

TRAN-5: The 2021 LRDP EIR identified a significant and unavoidable cumulative impact for the 2021 LRDP with respect to transportation. The cumulative setting for the Proposed Project is buildout under the 2021 LRDP, and the Proposed Project would not result in additional development beyond what was analyzed in the 2021 LRDP EIR. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

5.1.18 TRIBAL CULTURAL RESOURCES

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
Topics Evaluated in the 2021 LRDP EIR					
TCR-1: Cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is: 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), or 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 the Public Resource Code Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance to a California Native American tribe?	LTS/M		X		
TCR-2: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact to tribal cultural resources?	LTS		X		

Key: NI = no impact; LTS = less than significant; LTS/M = less than significant with mitigation; SU = significant and unavoidable

Summary of Analysis

No new significant or more severe impact than analyzed in the 2021 LRDP EIR.

Discussion

Topics Evaluated in the 2021 LRDP EIR

TCR-1: The 2021 LRDP EIR identified less-than-significant impacts with mitigation at the program level for the 2021 LRDP with respect to tribal cultural resources. The project site does not currently contain any known tribal cultural resources, and UC Berkeley did not receive information as a result of the tribal consultation process that the 2021 LRDP would potentially impact a known tribal cultural resource. However, development on-site could impact unknown tribal cultural resources, including Native American artifacts and human remains. The Proposed Project would implement 2021 LRDP EIR Mitigation Measure TCR-1, which requires implementation of Mitigation Measure CUL-2, described in the Cultural Resources section of this Addendum. Therefore, the Proposed Project would not result in any new or more severe impacts than were identified in the 2021 LRDP EIR, and no new mitigation measures would be required.

TCR-2: The 2021 LRDP EIR identified a less-than-significant cumulative impact for the 2021 LRDP with respect to tribal cultural resources. The cumulative setting for the Proposed Project is buildout under the 2021 LRDP, and the Proposed Project would not result in additional development beyond what was analyzed in the 2021 LRDP EIR. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

5.1.19 UTILITIES AND SERVICE SYSTEMS

Would the Proposed Project:

Environmental Issues		Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
			New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
Topics Evaluated in the 2021 LRDP EIR						
UTIL-1:	Require or result in the relocation or construction of new or expanded water facilities, the construction or relocation of which could cause significant environmental effects?	LTS		X		
UTIL-2:	Not have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	LTS		X		
UTIL-3:	In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact related to water supply?	LTS		X		
UTIL-4:	Require or result in the relocation or construction of new or expanded wastewater treatment or facilities, the construction or relocation of which could cause significant environmental effects?	LTS		X		

Would the Proposed Project:

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRDP	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
UTIL-5: Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	LTS		X		
UTIL-6: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact related to wastewater?	LTS		X		
UTIL-7: Require or result in the relocation or construction of new or expanded stormwater drainage facilities, the construction or relocation of which could cause significant environmental effects?	LTS		X		
UTIL-8: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact related to stormwater?	LTS		X		
UTIL-9: 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?	LTS		X		
UTIL-10: Not comply with federal, State, and local management and reduction statutes and regulations related to solid waste?	LTS		X		
UTIL-11: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact related to solid waste?	LTS		X		
UTIL-12: Require or result in the relocation or construction of new or expanded electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	LTS		X		
UTIL-13: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact related to electric power, natural gas, or telecommunications?	LTS		X		

Key: NI = no impact; LTS = less than significant; LTS/M = less than significant with mitigation; SU = significant and unavoidable

Summary of Analysis

No new significant or more severe impact than analyzed in the 2021 LRDP EIR.

Discussion

Topics Evaluated in the 2021 LRDP EIR

UTIL-1 and UTIL-2: The 2021 LRDP EIR identified less-than-significant impacts at the program level for the 2021 LRDP with respect to water facilities and supply. The Orinda Water Treatment Plant has maximum capacity of 200 million gallons per day (MGD). Full implementation of the 2021 LRDP would increase demand by 348 MG/year or approximately 1 MGD, which would amount to less than 1 percent of the plant's capacity and would not have an adverse effect on the plant's operation.[9] With a combination of water conservation measures and acquisition of supplemental supplies, EBMUD would be able to accommodate water demand in normal, single dry years, and multiple dry years. The Proposed Project would adhere to CBP USS-1, CBP USS-3, and CBP USS-4, which require UC Berkeley to continue to evaluate the size of existing distribution lines and the pressure of the specific feed affected by development; incorporate specific water conservation measures into project design; and analyze water and sewer systems on a project-by-project basis. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

UTIL-4 and UTIL-5: The 2021 LRDP EIR identified less-than-significant impacts in regard to wastewater treatment. EBMUD's wastewater treatment plant has a residual capacity of 57 MGD and can accommodate the increase of 0.70 MGD in wastewater generation from the 2021 LRDP.[10] The increased wastewater demand would represent about 0.67 percent of the wastewater treatment plant's excess capacity, and the average annual daily flow is well below the permitted capacity. The Proposed Project has been designed to minimize water consumption and wastewater production. Furthermore, since the Proposed Project would connect to the UC Berkeley sewer system, it is included in UC Berkeley's annual payment of fees to the City of Berkeley. Wastewater discharge would also be required to comply with EBMUD's wastewater control ordinance, EBMUD Wastewater Discharge Permit for UC Berkeley, and the UC Berkeley sewer system management plan. The Proposed Project would adhere to CBP USS-3 and CBP USS-4, as well as CBP USS-5 requiring payments to service providers to help fund wastewater treatment collection facilities in conformance with California Government Code Section 54999. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

UTIL-7: The 2021 LRDP EIR identified less-than-significant impacts concerning stormwater facilities. The Proposed Project will occur in an urbanized and developed area that already contains a large amount of impervious surface. The Proposed Project would comply with the requirements of the Phase II MS4 Permit and implement LID BMPs and site design BMPs, which effectively minimize the impact of impervious surfaces by retaining or detaining stormwater on-site, decreasing surface water flows, and slowing runoff rates. In addition, UC Berkeley manages runoff into storm drain systems so that the aggregate effect of new projects creates no net increase in runoff over existing conditions. Therefore, the Proposed Project would

[9] University of California Berkeley, July 2021, UC Berkeley 2021 Long Range Development Plan and Housing Projects #1 and #2 Environmental Impact Report, State Clearinghouse No. 2020040078, page 5.17-15.

[10] University of California Berkeley, July 2021, UC Berkeley 2021 Long Range Development Plan and Housing Projects #1 and #2 Environmental Impact Report, State Clearinghouse No. 2020040078, page 5.17-32.

not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

UTIL-9 and UTIL-10: The 2021 LRDP EIR identified less-than-significant impacts regarding solid waste generation and regulation. The Proposed Project would comply with the 2019 CALGreen Building Code Standards, the requirements of AB 341, AB 1826, SB 1383, SB 1335, the State Agency Buy Recycled Campaign, the City of Berkeley's Single Use Foodware Ordinance, and University of California's Sustainable Practices policies. The Keller Canyon Landfill would be able to accommodate projected solid waste from buildout of the 2021 LRDP until its closure date in 2030. If UC Berkeley has not yet met its zero-waste goal at that date, then an alternate landfill, such as Altamont Landfill, would be able to accommodate solid waste from UC Berkeley. Furthermore, the Proposed Project would adhere to CBP USS-6 and CBP USS-7, which require UC Berkley to continue implementing zero waste requirements, and contractors working for UC Berkeley to report their solid waste diversion. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

UTIL-12: The 2021 LRDP EIR identified less-than-significant impacts related to electric power, natural gas, and telecommunications. The 2021 LRDP would result in an increase in electricity consumption. The Proposed Project is an infill development. The project site is already served by electrical infrastructure and would not result in the relocation or construction of new or expanded electric power facilities. The 2021 LRDP would result in a net decrease in natural gas usage over the buildout horizon because University of California and UC Berkeley energy policies prohibit new natural gas connections in new construction or large renovation projects on sites that are not in the cogeneration plant system, which currently uses natural gas. UC Berkeley is already served by telecommunications infrastructure, and the Proposed Project is anticipated to connect to existing telecommunication facilities and would not result in the relocation or construction of new or expanded telecommunications facilities off-site. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

UTIL-3, UTIL-6, UTIL-8, UTIL-11, and UTIL-13: The 2021 LRDP EIR identified a less-than-significant cumulative impact for the 2021 LRDP with respect to utilities and service systems. The cumulative setting for the Proposed Project is buildout under the 2021 LRDP, and the Proposed Project would not result in additional development beyond what was analyzed in the 2021 LRDP EIR. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

5.1.20 WILDFIRE

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

Environmental Issues	Level of Impact for the 2021 LRDP in the 2021 LRDP EIR	Environmental Effects of the Proposed Project			
		New Less-Than-Significant Impact	Same Impact as 2021 LRD"	Less Impact Than 2021 LRDP	Topic Not Applicable to the Proposed Project
Topics Evaluated in the 2021 LRDP EIR					
WF-1: Substantially impair an adopted emergency response plan or emergency evacuation plan?	LTS		X		
WF-2: 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?	SU			X	
WF-3: 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?	SU			X	
WF-4: Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	SU			X	
WF-5: In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact related to wildfire?	SU		X		

Key: NI = no impact; LTS = less than significant; LTS/M = less than significant with mitigation; SU = significant and unavoidable

Summary of Analysis

No new significant or more severe impact than analyzed in the 2021 LRDP EIR.

Discussion

Topics Evaluated in the 2021 LRDP EIR

WF-1: The 2021 LRDP EIR identified a less-than-significant impact at the program level for the 2021 LRDP with respect to impairment of an adopted emergency response plan or emergency evacuation plan. The Proposed Project is not in a designated Fire Hazard Severity Zone (FHSZ), California Public Utilities Commission high-fire-threat district, or Wildland Urban Interface (WUI). The Proposed Project is in an urbanized area surrounded by existing development. However, it is within one-quarter mile of the Alameda County Local Responsibility Area (LRA) Very High FHSZ, and therefore vulnerable to wildfires in the area. The City of Berkeley General Plan identifies Hearst Avenue and Oxford Street, two roadways adjacent to the Proposed Project, as emergency evacuation routes; however, development of the Proposed Project would

not alter these or other surrounding roadways. UC Berkeley has its own Emergency Preparedness Program and Emergency Operations Plan and coordinates emergency preparations, response, and recovery activities, such as those pertaining to wildfire, under its Office of Emergency Management. The Proposed Project would be required to integrate these plans. In addition, the Proposed Project would comply with applicable regulations that involve fire prevention and safety measures, such as the CBC and CFC. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

WF-2 and WF-4: The 2021 LRDP EIR identified significant and unavoidable impacts concerning exacerbation of wildfire risks due to steep terrain and heavy vegetation in the Hill Campus East. The project site is within the Campus Park, which is generally flat. Because the project site is an already urbanized area and is not within a FHSZ or the WUI, the Proposed Project would not, from prevailing winds or other factors such as vegetation, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. In addition, the project site is not subject to landslide hazards and is not within a flood hazard zone. Under CBP WF-3, UC Berkeley will continue to plan and implement programs to reduce risk of wildland fires. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

WF-3: The 2021 LRDP EIR identified significant and unavoidable impacts concerning installation or maintenance of associated infrastructure in the Very High FHSZ that may exacerbate fire risk due to the potential unknown impacts from future development at the time of analysis. The Proposed Project would not require alteration of existing roadways. The site is currently served by existing utility systems, and the project would not require the installation of additional off-site utilities infrastructure. Due to the location of the Proposed Project outside of the fire hazard severity zones and the WUI, the installation of on-site utilities would not exacerbate fire risks. Furthermore, 2021 LRDP EIR Mitigation Measure WF-3 would require electrical lines associated with future electrical infrastructure to be undergrounded. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

WF-5: The 2021 LRDP EIR identified a significant and unavoidable cumulative impact for the 2021 LRDP with respect to wildfire. The cumulative setting for the Proposed Project is buildout under the 2021 LRDP, and the Proposed Project would not result in additional development beyond what was analyzed in the 2021 LRDP EIR. Therefore, the Proposed Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact.

5.2 MANDATORY FINDINGS OF SIGNIFICANCE

Would the Proposed Project:

Environmental Issues	New Less-Than-Significant Impact	Topic Not Applicable to the Proposed Project
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	X	
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	X	
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	X	

Discussion

a) With respect to biological resources and cultural resources, development under the Proposed Project would not change from the 2021 LRDP. The Proposed Project would not increase the 2021 LRDP's development program and boundaries. As discussed throughout this Addendum, the Proposed Project would not result in a new impact or a substantial increase in magnitude of the existing impacts.

b) CEQA Guidelines Section 15355, Cumulative Impacts, defines cumulative impacts as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts may result from individually minor, but collectively significant projects taking place over a period of time. As described in Section 4.3, *Development Program Consistency*, buildout of the Proposed Project, in addition to past and pending projects since certification of the 2021 LRDP EIR, is within the net new buildout analyzed in the 2021 LRDP EIR.

Section 5.1, *Environmental Evaluation of the Proposed Project*, of this Addendum includes an evaluation of the Proposed Project's potential cumulative impacts. As discussed throughout Section 5.1, the Proposed Project would not create any new significant cumulative impacts. The Proposed Project would incrementally contribute to, but would not exceed, the cumulative impacts analyses in the 2021 LRDP EIR. Therefore, the Proposed Project would not be expected to contribute to significant cumulative impacts when considered along with other projects constructed under the 2021 LRDP.

c) Development under the Proposed Project would not change from the 2021 LRDP with respect to direct and indirect effects on human beings. The Proposed Project would not increase the 2021 LRDP's development program and boundaries. As discussed throughout this Addendum, the Proposed Project would not result in a new impact or a substantial increase in magnitude of existing impacts.

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6. Conclusion

As summarized below, and for the reasons described in Section 5, *Environmental Analysis*, of this Addendum, UC Berkeley has concluded that the Proposed Project would not result in any new significant impacts not previously identified in the 2021 LRDP EIR; nor would it result in a substantial increase in the severity of any significant environmental impact previously identified in the 2021 LRDP EIR. For these reasons, a subsequent EIR is not required, and an Addendum to the 2021 LRDP EIR is the appropriate CEQA document to address the Proposed Project.

6.1 SUBSTANTIAL CHANGES TO THE PROJECT

The Proposed Project is not a substantial change to the 2021 LRDP because it is within the study area described in the 2021 LRDP EIR in Section 3.4, *EIR Study Area*, and shown on Figure 3-2, *EIR Study Area*, and because it is within the buildout and population projections described and evaluated in Section 3.5.1.8, *Development Program*, of the 2021 LRDP EIR. Consequently, there are no substantial changes proposed to the 2021 LRDP that will require major revisions of the 2021 LRDP EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

6.2 SUBSTANTIAL CHANGES IN CIRCUMSTANCES

As described in Section 5, *Environmental Analysis*, of this Addendum, the Proposed Project would not result in new significant environmental impacts beyond those identified in the 2021 LRDP EIR, would not substantially increase the severity of significant environmental effects identified in the 2021 LRDP EIR, and thus would not require major revisions to the 2021 LRDP EIR. The Proposed Project, therefore, is not substantial and does not require major revisions to the 2021 LRDP EIR or a subsequent EIR. In addition, the physical conditions within the UC Berkeley campus have not changed substantially since the certification of the 2021 LRDP EIR, although some structures have been improved and others have been demolished.

6.3 NEW INFORMATION

No new information of substantial importance, which was not known and could not have been known when the 2021 LRDP EIR was certified in 2021, shows that the Proposed Project would be expected to result in: 1) new significant environmental effects not identified in the 2021 LRDP EIR; 2) substantially more severe environmental effects than shown in the 2021 LRDP EIR; 3) mitigation measures or alternatives previously determined to be infeasible that would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project sponsor declines to adopt the mitigation or alternative; or 4) mitigation measures or alternatives that are considerably different from those identified in the 2021 LRDP EIR that would substantially reduce one or more significant effects of the project, but the project sponsor declines to adopt the mitigation measure or alternative.

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APPENDIX A

APPLICABLE PROGRAM-LEVEL MITIGATION MEASURES AND CONTINUING BEST PRACTICES

Applicable Program-Level Mitigation Measures and Continuing Best Practices

The table below identifies mitigation measures and Continuing Best Practices (CBPs) from the 2021 LRDP EIR that are applicable to the Gateway New Academic Building Project.

Topic	Type of Measure	Mitigation/ CBP #	Mitigation/Continuing Best Practice Text	Source Document
Air Quality	Mitigation Measure	AIR-2.1	UC Berkeley shall use equipment that meets the United States Environmental Protection Agency Tier 4 Final emissions standards or higher for off-road diesel-powered construction equipment with more than 50 horsepower, unless it can be demonstrated to UC Berkeley that such equipment is not commercially available. For purposes of this mitigation measure, "commercially available" shall mean the availability of Tier 4 Final engines similar to the availability for other large-scale construction projects in the city occurring at the same time and taking into consideration factors such as (i) potential significant delays to critical-path timing of construction and (ii) geographic proximity to the project site of Tier 4 Final equipment. Where such equipment is not commercially available, as demonstrated by the construction contractor, Tier 4 interim equipment shall be used. Where Tier 4 interim equipment is not commercially available, as demonstrated by the contractor, Tier 3 equipment retrofitted with a California Air Resources Board's Level 3 Verified Diesel Emissions Control Strategy (VDECS) shall be used. The requirement to use Tier 4 Final equipment or higher for engines over 50 horsepower shall be identified in construction bids and the following shall also be completed: • Prior to construction, the project engineer shall ensure that all demolition and grading plans clearly show the requirement for United States Environmental Protection Agency Tier 4 Final or higher emissions standards for construction equipment over 50 horsepower. • During construction, the construction contractor shall maintain a list of all operating equipment in use over 20 hours on the construction site for verification by UC Berkeley. • The construction equipment list shall state the makes, models, and numbers of construction equipment on-site. • To the extent that equipment is available and cost-effective, contractors shall use electric, hybrid, or alternate-fueled off-road construction equipment. • Contractors shall use electric construction tools, such as saws, drills, and compressors, where grid electricity is available. • Construction activities shall be prohibited when the Air Quality Index (AQI), as measured by the closest Bay Area Air Quality Management District monitoring station (e.g., Berkeley Aquatic Center), is greater than 150 for particulates and ozone in the project area. • Contractors shall provide information on transit and ridesharing programs and services to construction employees.	2021 LRDP EIR Table 6-1, Mitigation Monitoring and Reporting Program for the Long Range Development Plan

Topic	Type of Measure	Mitigation/ CBP #	Mitigation/Continuing Best Practice Text	Source Document
			Additionally, meal options on-site and/or shuttles between the facility and nearby meal destinations for construction employees shall be provided.	
Air Quality	Mitigation Measure	AIR-2.2	To reduce Reactive Organic Gas emissions, for interior architectural coatings, UC Berkeley shall utilize certified (e.g., Greenguard or Green Seal) low-Volatile Organic Compound (VOC) paints or, when feasible, no-VOC paints (i.e., less than 5 grams per liter of VOC). UC Berkeley shall verify that the requirement to use low-VOC (and/or no-VOC) paints is identified in construction bids and on architectural plans.	2021 LRDP EIR Table 6-1, Mitigation Monitoring and Reporting Program for the Long Range Development Plan
Air Quality	Mitigation Measure	AIR-3.1	Construction projects subject to CEQA on sites one acre or greater, within 1,000 feet of residential and other sensitive land use projects (e.g., hospitals, schools, nursing homes, day care centers), as measured from the property line of the project to the property line of the source/edge of the sensitive land use, that utilize off-road equipment of 50 horsepower or more and, that occur for more than 12 months of active construction (i.e., exclusive of interior renovations), shall require preparation of a construction health risk assessment (HRA) prior to future discretionary project approval, as recommended in the current HRA Guidance Manual prepared by the California Office of Environmental Health Hazard Assessment (OEHHA). Additionally, UC Berkeley shall consider whether unusual circumstances warrant evaluation of construction health risk for projects with construction durations of less than 12 months or on development sites smaller than one acre. For example, unusual circumstances would include sites that require extensive site preparation with more than 10,000 cubic yards of excavation. The construction HRA shall generally be prepared in accordance with policies and procedures of the OEHHA and the Bay Area Air Quality Management District. The latest OEHHA guidelines shall be used for the analysis, including age sensitivity factors, breathing rates, and body weights appropriate for children ages 0 to 16 years. If the construction HRA shows that the incremental cancer risk exceeds 10 in a million (10E-06), PM2.5 concentrations exceed 0.3 µg/m3, or the appropriate noncancer hazard index exceeds 1.0, the construction HRA shall be required to identify all feasible measures capable of reducing potential cancer and noncancer risks to an acceptable level to the extent feasible (i.e., below 10 in a million, a hazard index of 1.0, or 0.3 µg/m3 of PM2.5), including appropriate enforcement mechanisms. Examples of feasible measures include use of U.S. Environmental Protection Agency rated Tier 4 construction equipment, diesel particulate filters, and electric equipment. The construction health risk assessment shall be submitted to UC Berkeley's Office of Environment, Health & Safety for review and approval. Measures identified in the health risk assessment shall be included in bid documents, purchase orders, contracts, and grading plans prepared for the development projects. Compliance with these measures shall be verified during regular construction site inspections.	2021 LRDP EIR Table 6-1, Mitigation Monitoring and Reporting Program for the Long Range Development Plan
Biological Resources	Mitigation Measure	BIO-4	Structures and buildings that are new or are taller than existing structures and buildings shall be designed to minimize the potential risk of bird collisions. This should at a minimum include the following design considerations	2021 LRDP EIR Table 6-1,

Topic	Type of Measure	Mitigation/ CBP #	Mitigation/Continuing Best Practice Text	Source Document
			and management strategies: (1) avoid the use of highly reflective glass as an exterior treatment, which appears to reproduce natural habitat and can be attractive to some birds; (2) limit reflectivity and prevent exterior glass from attracting birds in building plans by utilizing low-reflectivity glass and providing other non-attractive surface treatments; (3) use low-reflectivity glass or other bird safe glazing treatments for the majority of the building's glass surface, not just the lower levels; (4) for office and commercial buildings, interior light "pollution" should be reduced during evening hours through the use of a lighting control system programmed to shut off during non-work hours and between 10 p.m. and sunrise; (5) exterior lighting should be directed downward and screened to minimize illuminating the exterior of the building at night, except as needed for safety and security; (6) untreated glass skyways or walkways, freestanding glass walls, and transparent building corners should be avoided; (7) transparent glass should not be allowed at the rooflines of buildings, including in conjunction with green roofs; and (8) all roof mechanical equipment should preferably be covered by low-profile angled roofing or other treatments so that obstacles to bird flight are minimized. These strategies shall be incorporated at the direction of the Campus Architect during plan review, and the Campus Architect shall confirm the incorporation of these strategies into architectural plans prior to building construction. The Campus Architect shall incorporate additional strategies to avoid or reduce avian collisions that are indicated by the best available science.	Mitigation Monitoring and Reporting Program for the Long Range Development Plan
Cultural Resources	Mitigation Measure	CUL-1.1e	Implement Mitigation Measure NOI-2.	2021 LRDP EIR Table 6-1, Mitigation Monitoring and Reporting Program for the Long Range Development Plan
Cultural Resources	Mitigation Measure	CUL-2	For construction projects that include substantial ground-disturbing activities (including, but not limited to, soil removal, parcel grading, new utility trenching, and foundation-related excavation), UC Berkeley shall implement the following steps to ensure impacts to archaeological resources will be less than significant. • All Projects with Ground-Disturbing Activities. ○ Prior to soil disturbance, UC Berkeley shall confirm that contractors have been notified of the procedures for the identification of federal- or State-eligible cultural resources, and that the construction crews are aware of the potential for previously undiscovered archaeological resources or tribal cultural resources on site, of the laws protecting these resources and associated penalties, and of the procedures to follow should they discover cultural resources during project-related work. ○ If a resource is discovered during construction (whether or not an archaeologist is present), the following measures shall be implemented: - All soil disturbing work within 35 feet of the find shall cease. - UC Berkeley shall contact a qualified archaeologist to provide and implement a plan for survey, subsurface	2021 LRDP EIR Table 6-1, Mitigation Monitoring and Reporting Program for the Long Range Development Plan

Topic	Type of Measure	Mitigation/ CBP #	Mitigation/Continuing Best Practice Text	Source Document
			investigation as needed to define the deposit, and assessment of the remainder of the site within the project area to determine whether the resource is significant and would be affected by the project. - Any previously undiscovered resources found during construction activities shall be recorded on appropriate California Department of Parks and Recreation forms and evaluated for significance in terms of the California Environmental Quality Act (CEQA) criteria by a qualified archaeologist. - If the resource is a tribal cultural resource, the consulting archaeologist, approved by UC Berkeley in consultation with the appropriate tribe as determined by the Native American Heritage Commission, shall consult with the appropriate tribe to evaluate the significance of the resource and to recommend appropriate and feasible avoidance, testing, preservation or mitigation measures, in light of factors such as the significance of the find, proposed project design, costs, and other considerations. - If avoidance is infeasible, other appropriate measures (e.g., data recovery) may be implemented. - If the resource is a non-tribal resource determined significant under CEQA, a qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan that will capture those categories of data for which the site is significant. - The archaeologist shall also perform appropriate technical analyses; prepare a comprehensive report complete with methods, results, and recommendations; and provide for the permanent curation of the recovered resources if appropriate. - The report shall be submitted to the relevant city (if it falls under Berkeley or Oakland boundaries), California Historic Resources Information System Northwest Information Center, and the State Historic Preservation Office, if required. • Areas with High Archaeological Sensitivity. In addition to the requirements above for all construction projects with ground-disturbing activities, for projects in areas with moderately high to extreme archaeological sensitivity (as shown on the confidential Figure 11, Prehistoric Cultural Sensitivity Overlay Analysis Results, prepared for the 2021 LRDP Update EIR) ground-disturbing activities shall be monitored from the outset. Monitoring shall occur for soil removal, parcel grading, new utility trenching, and foundation-related excavation in those areas that extend into previously undisturbed soils. If the resources are tribal, archaeological monitoring must be undertaken by a qualified archaeologist approved by UC Berkeley in consultation with the appropriate tribe as determined by the Native American Heritage Commission or the appropriate tribe, who is familiar with a wide range of prehistoric archaeological or tribal remains and is conversant in artifact identification, human and faunal bone, soil descriptions, and interpretation. Based on project-specific daily construction schedules, field conditions, and archaeological observations, full-time monitoring may not be warranted following initial observations. • Sites with Known Archaeological Resources. In the event the disturbance of a site with known archaeological or tribal cultural resources cannot be avoided, in addition to the requirements above for all construction projects with ground-disturbing activities, for project sites with known on-site archaeological or tribal cultural resources, the following additional actions shall be implemented prior to ground disturbance: ○ UC Berkeley, in consultation with the appropriate tribe, will retain a qualified archaeologist to conduct a	

Topic	Type of Measure	Mitigation/ CBP #	Mitigation/Continuing Best Practice Text	Source Document
			subsurface investigation of the project site, and to ascertain the extent of the deposit of any buried archaeological materials relative to the project's area of potential effects. The archaeologist shall prepare a site record and, upon tribal approval, it shall be filed with the California Historical Resource Information System. ○ If the resource extends into the project's area of potential effects, the resource shall be evaluated by a qualified archaeologist approved by UC Berkeley in consultation with the appropriate tribe. UC Berkeley shall consider this evaluation in determining whether the resource qualifies as a historical resource or a unique archaeological resource under the criteria of California Environmental Quality Act (CEQA) Guidelines Section 15064.5. - If the resource does not qualify, no further mitigation is required unless there is a discovery of additional resources during construction (as required above for all construction projects with ground-disturbing activities). - If a resource is determined to qualify as an historical resource or a unique archaeological resource in accordance with CEQA, UC Berkeley shall consult with the appropriate tribe (in the case of Native American sites) and a qualified archaeologist, approved by UC Berkeley in consultation with the appropriate tribe, to mitigate the effect through data recovery if appropriate to the resource or, if data recovery is infeasible, to consider means of avoiding or reducing ground disturbance within the site boundaries, including where and if feasible, minor modifications of building footprint, landscape modification, the placement of protective fill, the establishment of a preservation easement, or other means that would permit avoidance or substantial preservation in place of the resource. A written report of the results of investigations shall be prepared by a qualified archaeologist and, upon tribal approval, filed with the University Archives/ Bancroft Library and the California Historic Resources Information System Northwest Information Center.	
Geology and Soils	Mitigation Measure	GEO-5	For ground-disturbing activities within highly sensitive geologic formations (i.e., Franciscan Assemblage, Great Valley Sequence, Orinda Formation, Claremont Chert, unnamed mudstone, or older alluvium, as shown on Figure 5.6-1, Geologic Map, of the 2021 LRDP Update EIR), if pre-construction testing does not take place, ground-disturbing activities shall implement the following measures. "Ground-disturbing activities" shall include soil removal, parcel grading, utility trenching, and foundation-related excavation in those areas that extend into previously undisturbed soils. ● UC Berkeley shall provide a paleontological resources awareness training program to all construction personnel active on the project site during earth moving activities. The first training will be provided prior to the initiation of ground-disturbing activities by a qualified paleontologist. The program will include relevant information regarding fossils and fossil-bearing formations that may be encountered. The training will also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the project site. ● If any paleontological resources are encountered during ground-disturbing activities, the contractor shall ensure that activities in the immediate area of the find are halted and that UC Berkeley is informed. UC Berkeley shall retain a qualified paleontologist to evaluate the discovery and recommend appropriate treatment options pursuant to guidelines developed by the Society of Vertebrate Paleontology, including development and implementation of a paleontological resource impact mitigation program by a qualified paleontologist for treatment of the particular resource, if applicable. These measures may include, but not be limited to the following:	2021 LRDP EIR Table 6-1, Mitigation Monitoring and Reporting Program for the Long Range Development Plan

Topic	Type of Measure	Mitigation/ CBP #	Mitigation/Continuing Best Practice Text	Source Document
			○ salvage of unearthed fossil remains and/or traces (e.g., tracks, trails, burrows); ○ screen washing to recover small specimens; ○ preparation of salvaged fossils to a point of being ready for curation (e.g., removal of enclosing matrix, stabilization and repair of specimens, and construction of reinforced support cradles); and ○ identification, cataloging, curation, and provision for repository storage of prepared fossil specimens.	
Noise	Mitigation Measure	NOI-1	For construction projects that last longer than 30 days, and where construction noise could exceed the applicable noise thresholds of significance (see City of Berkeley Municipal Code Section 13.40.070, Prohibited Acts, and City of Oakland Municipal Code Section 17.120.050(A), Noise (Residential Zone Noise Level Standards)) for maximum construction noise levels (dBA Lmax), or that involve impulse equipment such as jackhammers, hoe rams, and pile driving, temporary noise barriers at least 12 feet high will be erected, as necessary and feasible, to reduce construction noise levels. Temporary noise barriers will be constructed with solid material with a density of at least 1.5 pounds per square foot with no gaps from the ground to the top of the temporary noise barrier and may be lined on the construction side with an acoustical blanket, curtain, or equivalent absorptive material. UC Berkeley shall verify compliance with this measure prior to issuance of demolition, grading, and/or building permits.	2021 LRDP EIR Table 6-1, Mitigation Monitoring and Reporting Program for the Long Range Development Plan
Noise	Mitigation Measure	NOI-2	If any vibration causing construction activities/equipment are anticipated to be used for future development projects, UC Berkeley shall implement the following steps to ensure impacts from vibration causing construction activities/equipment will be less than significant. • **Step 1 (Activity/Equipment Screening Distances):** UC Berkeley shall use the construction vibration screening standards shown below based on Federal Transit Administration criteria to determine if the construction activity/equipment is within the vibration screening distances that could cause building damage/human annoyance or sensitive equipment disturbance. If the construction activity/equipment is within the screening distance, then Step 2 (Alternative Methods/Equipment) shall be implemented.	2021 LRDP EIR Table 6-1, Mitigation Monitoring and Reporting Program for the Long Range Development Plan

Topic	Type of Measure	Mitigation/ CBP #	Mitigation/Continuing Best Practice Text	Source Document

Screening Distances to PPV in/sec Threshold: Building Damage

Activity/Equipment	Reference Vibration Levels (in/sec PPV) at 25 feet	Screening Level Distance in feet for 0.20 in/sec PPV [a]	Screening Level Distance in feet for 0.12 in/sec PPV [b]
Pile Driving	1.518	97	136
Caisson Drilling	0.089	15	21
Vibratory Roller	0.21	26	37
Large Bulldozer	0.089	15	21

Screening Distance to VdB Threshold: Human Annoyance and Sensitive Equipment Disturbance

Activity/Equipment	Reference Vibration Levels (VdB) at 25 feet	Screening Level Distance in feet for 72 VdB [c]	Screening Level Distance in feet for 65 VdB [d]
Pile Driving	112	520	890
Caisson Drilling	87	80	140
Vibratory Roller	94	140	240
Large Bulldozer	87	80	140

Notes: Peak Particle Velocity inches per second (PPV in/sec); Vibration Decibel (VdB).
a. FTA Building Category III, Non-engineered timber and masonry buildings (residential).
b. FTA Building Category IV, Buildings extremely susceptible to vibration damage (historic).
c. FTA Land Use Category 2, Residences and buildings where people normally sleep.
d. FTA Land Use Category 1, Buildings where vibration would interfere with interior operations.
Source: Federal Transit Administration, 2018, Transit Noise and Vibration Impact Assessment.

- **Step 2 (Alternative Methods/Equipment):** When the anticipated vibration-causing construction activity/equipment is within the screening standards in Step 1 (Activity/Equipment Screening Distances), UC Berkeley shall consider whether alternative methods/equipment are available and shall verify that the alternative method/equipment is shown on the construction plans prior to the beginning of construction. Alternative methods/equipment may include, but are not limited to:
  - For pile driving, the use of caisson drilling (drill piles), vibratory pile drivers, oscillating or rotating pile installation methods, pile pressing, "silent" piling, and jetting or partial jetting of piles into place using a water injection at the tip of the pile shall be used, where feasible.
  - For paving, use of a static roller in lieu of a vibratory roller shall be implemented.
  - For grading and earthwork activities, off-road equipment shall be limited to 100 horsepower or less.

  Where alternative methods/equipment to vibration causing activities/equipment are not feasible, then Step 3 (Construction Vibration Monitoring Program) shall be implemented.
- **Step 3 (Construction Vibration Monitoring Program):** Prior to any project-related excavation, demolition or construction activity for projects within the screening distances listed in Step 1 (Activity/Equipment Screening

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			Distances) and where alternative methods/equipment to vibration causing activities/equipment are not feasible pursuant to Step 2 (Alternative Methods/Equipment), UC Berkeley shall prepare a construction vibration monitoring program. The program shall be prepared and implemented by a qualified acoustical consultant or structural engineer. Where the vibration sensitive receptors are historic resources, the program shall be prepared and implemented by a structural engineer with a minimum of five years of experience in the rehabilitation and restoration of historic buildings and a historic preservation architect meeting the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, Professional Qualifications Standards. The program shall include the following: ○ Prepare an existing conditions study to establish the baseline condition of the vibration sensitive resources in the form of written descriptions with a photo survey, elevation survey, and crack-monitoring survey for the vibration-sensitive building or structure. The photo survey shall include internal and external crack monitoring in the structure, settlement, and distress, and document the condition of the foundation, walls and other structural elements in the interior and exterior of the building or structure. Surveys will be performed prior to, in regular intervals during, and after completion of all vibration-generating activity. Where receptors are historic resources, the study shall describe the physical characteristics of the resources that convey their historic significance. ○ Determine the number, type, and location of vibration sensors and establish a vibration velocity limit (as determined based on a detailed review of the proposed building), method (including locations and instrumentation) for monitoring vibrations during construction, and method for alerting responsible persons who have the authority to halt construction should limits be exceeded or damaged observed. ○ Perform monitoring surveys prior to, in regular intervals during, and after completion of all vibration-generating activity and report any changes to existing conditions, including, but not limited to, expansion of existing cracks, new spalls, other exterior deterioration, or any problems with character-defining features of a historic resource are discovered. UC Berkeley shall establish the frequency of monitoring and reporting, based upon the recommendations of the qualified acoustical consultant or structural engineer or if there are historic buildings, the historic architect and structural engineer. Monitoring reports shall be submitted to UC Berkeley's designated representative responsible for construction activities. ○ Develop a vibration monitoring and construction contingency plan, which shall identify where monitoring would be conducted, establish a vibration monitoring schedule, define structure-specific vibration limits, and require photo, elevation, and crack surveys to document conditions before and after demolition and construction activities. Construction contingencies would be identified for when vibration levels approach the limits. If vibration levels approach limits, suspend construction and implement contingencies to either lower vibration levels or secure the affected structure. ○ Report substantial adverse impacts to vibration sensitive buildings including historic resources related to construction activities that are found during construction to UC Berkeley's designated representative responsible for construction activities. UC Berkeley's designated representative shall adhere to the monitoring team's recommendations for corrective measures, including halting construction or using different methods, in situations	

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			where demolition, excavation/construction activities would imminently endanger historic resources. UC Berkeley's designated representative would respond to any claims of damage by inspecting the affected property promptly, but in no case more than five working days after the claim was filed and received by UC Berkeley's designated representative. Any new cracks or other damage to any of the identified properties will be compared to pre-construction conditions and a determination made as to whether the proposed project could have caused such damage. In the event that the project is demonstrated to have caused any damage, such damage would be repaired to the pre-existing condition. Site visit reports and documents associated with claims processing would be provided to the relevant government body with jurisdiction over the neighboring historic resource, as necessary. ○ Conduct a post-survey on the structure where either monitoring has indicated high levels or complaints of damage and make appropriate repairs where damage has occurred as a result of construction activities. ○ Prepare a construction vibration monitoring report that summarizes the results of all vibration monitoring and submit the report after the completion of each phase identified in the project construction schedule. The vibration monitoring report shall include a description of measurement methods, equipment used, calibration certificates, and graphics as required to clearly identify vibration-monitoring locations. An explanation of all events that exceeded vibration limits shall be included together with proper documentation supporting any such claims. The construction vibration monitoring report shall be submitted to UC Berkeley within two weeks upon completion of each phase identified in the project construction schedule. ○ Designate a person responsible for registering and investigating claims of excessive vibration. The contact information of such person shall be clearly posted in one or more locations at the construction site	
Cultural Resources	Mitigation Measure	TCR-1	Implement Mitigation Measure CUL-2.	2021 LRDP EIR Table 6-1, Mitigation Monitoring and Reporting Program for the Long Range Development Plan
Wildfire	Mitigation Measure	WF-3	Electrical lines associated with future electrical infrastructure shall be undergrounded, where feasible. UC Berkeley shall verify compliance with this measure as part of plan review prior to construction.	2021 LRDP EIR Table 6-1, Mitigation Monitoring and Reporting Program for the Long Range Development Plan

Topic	Type of Measure	Mitigation/ CBP #	Mitigation/Continuing Best Practice Text	Source Document
Aesthetics	Continuing Best Practice	AES-1	New projects will as a general rule conform to the Physical Design Framework. While the guidelines in the Physical Design Framework would not preclude alternate design concepts when such concepts present the best solution for a particular site, UC Berkeley will not depart from the Physical Design Framework except for solutions of extraordinary quality.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Aesthetics	Continuing Best Practice	AES-2	Major new campus projects will continue to be reviewed at each stage of design by the UC Berkeley Design Review Committee. The provisions of the LRDP, as well as project-specific design guidelines prepared for each such project, will guide these reviews.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Aesthetics	Continuing Best Practice	AES-6	Lighting for new development projects will be designed to include shields and cut-offs that minimize light spillage onto unintended surfaces and minimize atmospheric light pollution. The only exception to this principle will be in those areas where such features would be incompatible with the visual and/or historic character of the area.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Aesthetics	Continuing Best Practice	AES-7	As part of UC Berkeley's design review procedures, light and glare will be given specific consideration and measures will be incorporated into the project design to minimize both. In general, exterior surfaces will not be reflective; architectural screens and shading devices are preferable to reflective glass.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Air Quality	Continuing Best Practice	AIR-2	UC Berkeley will continue to comply with the current Bay Area Air Quality Management District basic control measures for fugitive dust control. The requirement to comply with the basic control measures will be identified in construction bids. The Bay Area Air Quality Management District's current basic control measures include: • Water all active construction areas at least twice daily, or as often as needed to control dust emissions. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water will be used whenever possible. • Pave, apply water twice daily or as often as necessary to control dust, or apply (nontoxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites. • Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer). • Sweep daily (with water sweepers using reclaimed water if possible) or as often as needed all paved access roads,	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring

Topic	Type of Measure	Mitigation/ CBP #	Mitigation/Continuing Best Practice Text	Source Document
			parking areas and staging areas at the construction site to control dust. • Sweep public streets daily (with water sweepers using reclaimed water if possible) in the vicinity of the project site, or as often as needed, to keep streets free of visible soil material. • Hydroseed or apply nontoxic soil stabilizers to inactive construction areas. • Enclose, cover, water twice daily, or apply nontoxic soil binders to exposed stockpiles (dirt, sand, etc.). • Limit vehicle traffic speeds on unpaved roads to 15 miles per hour. • Replant vegetation in disturbed areas as quickly as possible.	
Air Quality	Continuing Best Practice	AIR-3	UC Berkeley will continue to implement the following control measures to reduce emissions of diesel particulate matter and ozone precursors from construction equipment exhaust: • Equipment will be properly serviced and maintained in accordance with the manufacturer's recommendations. • Construction contractors will also ensure that all nonessential idling of construction equipment is restricted to five minutes or less, in compliance with Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Biological Resources	Continuing Best Practice	BIO-1	Avoid disturbance or removal of bird nests protected under the federal Migratory Bird Treaty Act and California Department of Fish and Game Code when in active use. This will be accomplished by taking the following steps. • If tree removal and initial construction is proposed during the nesting season (February 1 to August 31), a focused survey for nesting raptors and other migratory birds will be conducted by a qualified biologist within 14 days prior to the onset of tree and vegetation removal in order to identify any active nests on the site and surrounding area within up to 500 feet of proposed construction, with the distance to be determined by a qualified biologist based on project location. The site will be resurveyed to confirm that no new nests have been established if vegetation removal and demolition has not been completed or if construction has been delayed or stopped for more than seven consecutive days during the nesting season. • If no active nests are identified during the construction survey period, or development is initiated during the non-breeding season (September 1 to January 31), tree and vegetation removal and building construction may proceed with no restrictions. • If bird nests are found, an adequate setback will be established around the nest location and vegetation removal, building demolition, and other construction activities shall be restricted within this no-disturbance zone until the qualified biologist has confirmed that birds have either not begun egg-laying and incubation, or that the juveniles from those nests are foraging independently and capable of survival outside the nest location. Required setback distances for the no-disturbance zone will be based on input received from the California Department of Fish and Wildlife and may vary depending on species and sensitivity to disturbance. As necessary, the no-disturbance zone will be fenced with temporary orange construction fencing if construction is to be initiated on the remainder of the site. • A report of findings will be prepared by the qualified biologist and submitted to the UC Berkeley's Office of Physical & Environmental Planning for review and approval prior to initiation of vegetation removal, building demolition and other construction activities during the nesting season. The report will either confirm absence of any active nests or confirm that any young are located within a designated no-disturbance zone and construction can proceed. No	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring

Topic	Type of Measure	Mitigation/ CBP #	Mitigation/Continuing Best Practice Text	Source Document
			report of findings is required if vegetation removal and other construction activities are initiated during the non-nesting season and continue uninterrupted according to the above criteria.	
Biological Resources	Continuing Best Practice	BIO-9	Adverse effects to specimen trees and plants will be avoided. UC Berkeley will continue to implement the Campus Specimen Tree Program to reduce effects to specimen trees and flora. Replacement landscaping will be provided where specimen resources are adversely affected, either through salvage and transplanting of existing trees and shrubs or through new horticulturally appropriate replacement plantings, as directed by the Campus Landscape Architect.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Biological Resources	Continuing Best Practice	BIO-10	Implementation of the recommendations of the Landscape Master Plan and subsequent updates, and project-specific design guidelines, will provide for stewardship of existing landscaping, and use of replacement and expanded tree and shrub plantings to improve the important open space characteristics and resilience of the Campus Park. Native plantings and horticulturally appropriate species will continue to be used in future landscaping, serving to partially replace any trees lost as a result of development.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Biological Resources	Continuing Best Practice	BIO-11	Trees and other vegetation require routine maintenance. As trees age and become senescent, UC Berkeley will continue to undertake trimming, thinning, or removal, particularly if trees become a safety hazard. Vegetation in the Hill Campus East requires continuing management for fire safety, emergency evacuation, habitat enhancement, and other objectives. This may include removal of mature trees such as native live oaks and non-native plantings of eucalyptus and pine. The Landscape Master Plan, Landscape Heritage Plan and their subsequent updates will provide guidance on potential species to replace trees that are removed, where appropriate.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Cultural Resources	Continuing Best Practice	CUL-1	UC Berkeley will follow the procedures of conduct following the discovery of human remains that have been mandated by Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98 and the California Code of Regulations Section 15064.5(e) (California Environmental Quality Act [CEQA]). According to the provisions in CEQA, if human remains are encountered at the site, all work in the immediate vicinity of the discovery shall cease and necessary steps to ensure the integrity of the immediate area shall be taken. The County Coroner shall be notified immediately. The Coroner shall then determine whether the remains are Native American. If the Coroner determines the remains are Native American, the Coroner shall notify the California Native American Heritage Commission (NAHC) within 24 hours, who will, in turn, notify the person the NAHC identifies as the Most Likely Descendant (MLD) of any human remains. Further actions shall be determined, in part, by the desires of the MLD. The MLD has 48 hours to make recommendations regarding the disposition of the remains following notification from the NAHC of the discovery. If the NAHC is unable to identify an MLD, the MLD fails to make a recommendation within 48 hours after being notified, or the landowner rejects the recommendation of the MLD, and mediation by the NAHC fails to provide measures acceptable to the landowner, the owner shall, with appropriate dignity, reinter the remains in an area of the property secure from further disturbance.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring

Topic	Type of Measure	Mitigation/ CBP #	Mitigation/Continuing Best Practice Text	Source Document
Geology and Soils	Continuing Best Practice	GEO-1	UC Berkeley will continue to comply with the California Building Code and the University of California Seismic Safety Policy.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Geology and Soils	Continuing Best Practice	GEO-2	Site-specific geotechnical studies will be conducted under the supervision of a California Registered Certified Engineering Geologist or licensed geotechnical engineer and UC Berkeley will incorporate recommendations for geotechnical hazard prevention and abatement into project design.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Geology and Soils	Continuing Best Practice	GEO-3	The UC Berkeley Seismic Review Committee will continue to review all seismic and structural engineering design for new and renovated existing buildings on campus.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Geology and Soils	Continuing Best Practice	GEO-4	UC Berkeley will continue to use site-specific seismic ground motions for analysis and design of campus projects. Site-specific ground motions provide more current geo-seismic data than the U.S. Geological Survey (USGS) and are used for performance-based analyses.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Geology and Soils	Continuing Best Practice	GEO-6	UC Berkeley will continue to implement programs and projects in emergency planning, training, response, and recovery. Each campus Building Coordinator will prepare, and update as needed, building response plans and coordinate education and planning for all building occupants.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Geology and Soils	Continuing Best Practice	GEO-7	As stipulated in the UC Seismic Safety Policy, the design parameters for specific site peak acceleration and structural reinforcement will be determined by the geotechnical and structural engineer for each new or rehabilitation project proposed under the LRDP. The acceptable level of actual damage that could be sustained by specific structures will be calculated based on geotechnical information obtained at the specific building site.	2021 LRDP EIR Table 7-1, Continuing Best Practices

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				Implementation and Monitoring
Geology and Soils	Continuing Best Practice	GEO-8	Site-specific geotechnical studies will include an assessment of landslide hazard, including seismic vibration and other factors contributing to slope stability.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Geology and Soils	Continuing Best Practice	GEO-9	Campus construction projects must comply with the Campus Design Standards, which contain regulatory and other campus requirements for construction-phase and post-construction stormwater management.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Geology and Soils	Continuing Best Practice	GEO-10	In the event that a unique paleontological resource is identified during project planning or construction, the work will stop immediately in the area of effect, and the find will be protected until its significance can be determined by a qualified paleontologist. If the resource is determined to be a "unique resource," a mitigation plan will be formulated pursuant to guidelines developed by the Society of Vertebrate Paleontology and implemented to appropriately protect the significance of the resource by preservation, documentation, and/or removal, prior to recommencing activities in the area of effect. The plan will be prepared by the qualified paleontologist and submitted to the UC Berkeley project manager for review and approval prior to initiation or recommencement of construction activities in the area of effect.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Hazards and Hazardous Materials	Continuing Best Practice	HAZ-1	UC Berkeley will continue to implement the same (or equivalent) health and safety plans, programs, practices, and procedures related to the use, storage, disposal, or transportation of hazardous materials and wastes (including chemical, radioactive, and biohazardous materials and waste) during the LRDP planning horizon. These include, but are not limited to: • Requirements for safe transportation of hazardous materials • UC Berkeley Office of Environment, Health & Safety training programs and oversight • The Hazard Communication Program • Publication and promulgation of the Water Protection Policy, the drain disposal guidelines, the Wastewater Toxics Management Plan, and the Slug Control Plan • Requirements that laboratories have Chemical Hygiene Plans and a chemical inventory database • The Aboveground Storage Tank Spill Prevention Control and Countermeasure Plan and monitoring of underground storage tanks • Implementation of the hazardous waste disposal program and policies	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring

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			• The Green Labs Program • The Biosafety Program • The Medical Waste Management Program • The Laser Safety Program • The Radiation Safety Program • The Drain Disposal Restrictions These programs may be subject to modification as regulations or UC Berkeley policies are developed or if the programs become obsolete through replacement by other programs that incorporate similar or more effective health and safety protection measures. However, any modifications must incorporate similar or more effective health and safety protection measures.	
Hazards and Hazardous Materials	Continuing Best Practice	HAZ-5	UC Berkeley will continue to perform site histories and due diligence assessments of all sites where ground-disturbing construction is proposed, to assess the potential for soil and groundwater contamination resulting from past or current site land uses at the site or in the vicinity. The investigation will include review of regulatory records, historical maps and other historical documents, and inspection of current site conditions. UC Berkeley will act to protect the health and safety of workers or others potentially exposed should hazardous site conditions be found.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Hydrology and Water Quality	Continuing Best Practice	HYD-1	During the plan check review process and construction phase monitoring, UC Berkeley Office of Environment, Health & Safety will review each development project to determine whether project runoff would increase pollutant loading and verify that the proposed project complies with all applicable requirements (e.g., Regional Water Quality Control Board and Campus Design Standards requirements) and best management practices (e.g., those described in the California Stormwater Quality Association's Construction BMP Handbook).	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Hydrology and Water Quality	Continuing Best Practice	HYD-2	UC Berkeley will continue implementing an urban runoff management program containing best management practices, as published in the Strawberry Creek Management Plan, and as developed through the Stormwater Permit Annual Reports completed for the Phase II municipal separate storm sewer system (MS4) permit. UC Berkeley will continue to comply with the MS4 stormwater permitting requirements by implementing construction and post-construction control measures and best management practices required by project-specific Stormwater Pollution Prevention Plans (SWPPPs) and by the Phase II MS4 permit to control pollution. SWPPPs will be prepared by the project contractor as required to prevent discharge of pollutants and to minimize sedimentation resulting from construction and the transport of soils by construction vehicles.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Hydrology and Water Quality	Continuing Best Practice	HYD-3	UC Berkeley will maintain a campuswide educational program regarding safe use and disposal of facilities maintenance chemicals and laboratory chemicals to prevent the discharge of these pollutants to Strawberry Creek and campus storm drains.	2021 LRDP EIR Table 7-1, Continuing Best Practices

Topic	Type of Measure	Mitigation/ CBP #	Mitigation/Continuing Best Practice Text	Source Document
				Implementation and Monitoring
Hydrology and Water Quality	Continuing Best Practice	HYD-4	Where feasible, parking will be built in covered parking structures and not exposed to rain to address potential stormwater runoff pollutant loads.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Hydrology and Water Quality	Continuing Best Practice	HYD-5	Landscaped areas of development sites will be designed to absorb runoff from rooftops and walkways. Open or porous paving systems will be included in project designs, where feasible, to minimize impervious surfaces and absorb runoff.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Hydrology and Water Quality	Continuing Best Practice	HYD-7	UC Berkeley will continue to review each development project, to determine whether rainwater infiltration to groundwater is affected. If it is determined that existing infiltration rates would be adversely affected, UC Berkeley will design and implement the necessary improvements to retain and infiltrate stormwater. Such improvements could include retention basins to collect and retain runoff, grassy swales, infiltration galleries, planter boxes, permeable pavement, or other retention methods. The goal of the improvement should be to ensure that there is no net decrease in the amount of water recharged to groundwater that serves as freshwater replenishment to Strawberry Creek. The improvement should maintain the volume of flows and times of concentration from any given site at pre-development conditions.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Hydrology and Water Quality	Continuing Best Practice	HYD-8	Dewatering, when needed, will be monitored and maintained by qualified engineers in compliance with the Campus Design Standards and applicable regulations.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Hydrology and Water Quality	Continuing Best Practice	HYD-13	UC Berkeley will continue to manage runoff into storm drain systems such that the aggregate effect of projects implemented pursuant to the LRDP creates no net increase in runoff over existing conditions.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring

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Land Use and Planning	Continuing Best Practice	LU-1	New projects in the Campus Park will, as a general rule, conform to the Physical Design Framework. The Physical Design Framework includes specific provisions to ensure projects at the city interface consider the transition from campus to city.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Noise	Continuing Best Practice	NOI-1	Mechanical equipment selection and building design shielding will be used, as appropriate, so that noise levels from future building operations would not exceed the City of Berkeley Noise Ordinance limits for commercial areas or residential zones as measured on any commercial or residential property in the area surrounding a project proposed to implement the LRDP. Controls typically incorporated to attain this outcome include selection of quiet equipment, sound attenuators on fans, sound attenuator packages for cooling towers and emergency generators, acoustical screen walls, and equipment enclosures.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Noise	Continuing Best Practice	NOI-2	UC Berkeley will require the following measures for all construction projects: • Construction activities will be limited to a schedule that minimizes disruption to uses surrounding the project site as much as possible. Construction outside the Campus Park will be scheduled within the allowable construction hours designated in the noise ordinance of the local jurisdiction to the full feasible extent, and exceptions will be avoided except where necessary. As feasible, construction equipment will be required to be muffled or controlled. • The intensity of potential noise sources will be reduced where feasible by selection of quieter equipment (e.g., gas or electric equipment instead of diesel powered, low noise air compressors). • Functions such as concrete mixing and equipment repair will be performed off-site whenever possible. • Stationary equipment such as generators and air compressors will be located as far as feasible from nearby noise-sensitive uses. • At least 10 days prior to the start of construction activities, a sign will be posted at the entrance(s) to the job site, clearly visible to the public, that includes contact information for UC Berkeley's authorized representative in the event of a noise or vibration complaint. If the authorized contractor's representative receives a complaint, they will investigate, take appropriate corrective action, and report the action to UC Berkeley. • During the entire active construction period and to the extent feasible, the use of noise-producing signals, including horns, whistles, alarms, and bells, will be for safety warning purposes only. The construction manager will use smart back-up alarms, which automatically adjust the alarm level based on the background noise level, or switch off back-up alarms and replace with human spotters in compliance with all safety requirements and laws. For projects requiring pile driving: • With approval of the project structural engineer, pile holes will be pre-drilled to minimize the number of impacts necessary to seat the pile. • Pile driving will be scheduled to have the least impact on nearby sensitive receptors.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring

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			• Pile drivers with the best available noise control technology will be used. For example, pile driving noise control may be achieved by shrouding the pile hammer point of impact, by placing resilient padding directly on top of the pile cap, and/or by reducing exhaust noise with a sound-absorbing muffler. • Alternatives to impact hammers, such as oscillating or rotating pile installation systems, will be used where feasible.	
Transportation	Continuing Best Practice	TRAN-1	UC Berkeley will implement bicycle, pedestrian, and transit access and circulation improvements as part of new building projects, major renovations, and landscape projects. Improvements will address the goal of increasing non-vehicular commuting and safety; improving access from adjacent campus or city streets and public transit; reducing multi-modal conflict; providing bicycle parking; and providing commuter amenities.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Transportation	Continuing Best Practice	TRAN-4	UC Berkeley will continue to work with the City of Berkeley, AC Transit, and BART to coordinate transit access to new academic buildings, parking facilities, and campus housing projects, in order to accommodate changing locations or added demand.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Transportation	Continuing Best Practice	TRAN-5	UC Berkeley will require contractors working on major new construction or major renovation projects to develop and implement a Construction Traffic Management Plan that reduces construction-period impacts on circulation and parking within the vicinity of the project site. The Construction Traffic Management Plan will address job-site access, vehicle circulation, bicycle and pedestrian safety, and be coordinated with the City of Berkeley Public Works Department when projects require temporary modifications to city streets.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Transportation	Continuing Best Practice	TRAN-6	For each construction project, UC Berkeley will require the prime contractor to prepare a Construction Traffic Management Plan which will include the following elements: • Proposed truck routes to be used, consistent with the City truck route map. • Construction hours, including limits on the number of truck trips during the morning (AM) and evening (PM) peak traffic periods (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.), if conditions demonstrate the need. • Proposed employee parking plan (number of spaces and planned locations). • Proposed construction equipment and materials staging areas, demonstrating minimal conflicts with circulation patterns. • Expected traffic detours needed, planned duration of each, and traffic control plans for each. • Identifying bicycle and pedestrian detours and safety plan, including solutions to address impacts to accessible routes.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring

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Transportation	Continuing Best Practice	TRAN-7	UC Berkeley will manage project schedules to minimize the overlap of excavation or other heavy truck activity periods that have the potential to combine impacts on traffic loads and street system capacity, to the extent feasible.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Transportation	Continuing Best Practice	TRAN-8	UC Berkeley will reimburse the City of Berkeley for its fair share of costs associated with damage to City streets from UC Berkeley construction activities, provided that the City adopts a policy for such reimbursements applicable to all development projects within Berkeley.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Utilities and Service Systems	Continuing Best Practice	USS-1	For development that increases water demand, UC Berkeley will continue to evaluate the size of existing distribution lines as well as pressure of the specific feed affected by development on a project-by-project basis, and necessary improvements will be incorporated into the scope of work for each project to maintain current service and performance levels. The design of the water distribution system, including fire flow, for new buildings will be coordinated among UC Berkeley, the East Bay Municipal Utility District, and the City of Berkeley Public Works Department and Fire Department.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Utilities and Service Systems	Continuing Best Practice	USS-3	UC Berkeley will continue to incorporate specific water conservation measures into project design to reduce water consumption and wastewater generation. This could include the use of special air-flow aerators, water-saving shower heads, flush cycle reducers, low-volume toilets, weather-based or evapotranspiration irrigation controllers, drip irrigation systems, and the use of drought resistant plantings in landscaped areas, and collaboration with the East Bay Municipal Utility District to explore suitable uses of recycled water.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Utilities and Service Systems	Continuing Best Practice	USS-4	UC Berkeley will analyze water and sewer systems on a project-by-project basis to determine specific capacity considerations for both UC Berkeley systems and off-site municipal systems in the planning of any project proposed under the LRDP.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Utilities and Service Systems	Continuing Best Practice	USS-5	Payments to service providers to help fund wastewater treatment or collection facilities will conform to Section 54999 of the California Government Code, including, but not limited to, the following provisions: ● Fees will be limited to the cost of capital construction or expansion. ● Fees will be imposed only after an agreement has been negotiated by UC Berkeley and the service provider. ● The service provider must demonstrate the fee is nondiscriminatory: i.e. the fee must not exceed an amount	2021 LRDP EIR Table 7-1, Continuing Best Practices

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			determined on the basis of the same objective criteria and methodology applied to comparable nonpublic users, and must not exceed the proportionate share of the cost of the facilities of benefit to the entity property being charged, based upon the proportionate share of use of those facilities. The service provider must demonstrate the amount of the fee does not exceed the amount necessary to provide capital facilities for which the fee is charged.	Implementation and Monitoring
Utilities and Service Systems	Continuing Best Practice	USS-6	UC Berkeley will continue to implement the Zero Waste requirements of the UC Sustainability Policy designed to reduce the total quantity of campus solid waste that is disposed of in landfills.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Utilities and Service Systems	Continuing Best Practice	USS-7	In accordance with the CalGreen Code, and as required for Leadership in Energy and Environmental Design certification, contractors working for UC Berkeley will be required under their contracts to report their solid waste diversion according to UC Berkeley's waste management reporting requirements.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring
Wildfire	Continuing Best Practice	WF-3	UC Berkeley will continue to plan and implement programs to reduce risk of wildland fires, including plan review and construction inspection programs that ensure that its projects incorporate fire prevention measures.	2021 LRDP EIR Table 7-1, Continuing Best Practices Implementation and Monitoring

APPENDIX B

CONSTRUCTION HEALTH RISK ASSESSMENT

1. Construction Health Risk Assessment

1.1 INTRODUCTION

On July 22, 2021, the Board of Regents of the University of California (the Regents) certified the University of California (UC), Berkeley 2021 Long Range Development Plan (LRDP Update) and Housing Projects #1 and #2 Environmental Impact Report (EIR), State Clearinghouse (SCH) No. 2020040078. The programmatic LRDP Update evaluated a development program for up to 8,096,249 square feet of new building space for residential, academic life, campus life, and parking facilities and 11,731 new beds. The two housing projects were approved by the Regents on July 22, 2021 and September 30, 2021, respectively. Together the LRDP Update and Housing Projects #1 and #2 and the 2021 EIR, including any subsequent addenda, are considered the "Evaluated Project" and the "Certified EIR," respectively.

The University of California Berkeley (UC Berkeley or the university) proposes to develop The Gateway Project (Proposed Project) in the northwest quadrant of the UC Berkeley Campus Park. The Proposed Project site is on Hearst Avenue at the intersections with Arch Street and Le Conte Avenue in the City of Berkeley, Alameda County, California. The Proposed Project was included in the Certified EIR as a potential redevelopment project as project CP11 and conceptually planned for 408,000 square feet (SF) of academic life space.

The Certified EIR concluded construction-related health risk impacts associated with the LRDP Update are considered significant and unavoidable at the program level, and included the following mitigation measure:

> **Mitigation Measure AIR-3.1:** Construction of projects subject to CEQA on sites one acre or greater, within 1,000 feet of residential and other sensitive land use projects (e.g., hospitals, schools, nursing homes, day care centers), as measured from the property line of the project to the property line of the source/edge of the sensitive land use, that utilize off-road equipment of 50 horsepower or more and, that occur for more than 12 months of active construction (i.e., exclusive of interior renovations), shall require preparation of a construction health risk assessment (HRA) prior to future discretionary project approval, as recommended in the current HRA Guidance Manual prepared by the California Office of Environmental Health Hazard Assessment (OEHHA). Additionally, UC Berkeley shall consider whether unusual circumstances warrant evaluation of construction health risks for projects with construction durations of less than 12 months or on development sites smaller than one acre. For example, unusual circumstances would include sites that require extensive site preparation with more than 10,000 cubic yards of excavation. The construction HRA shall generally be prepared in accordance with policies and procedures of the OEHHA and the Bay Area Air Quality Management District. The latest OEHHA guidelines shall be used for the analysis, including age sensitivity factors, breathing rates, and body weights appropriate for children ages 0 to 16 years. If the construction HRA shows that the incremental cancer risk exceeds 10 in a million (10E-06), $PM_{2.5}$ concentrations exceed 0.3 $\mu g/m^3$, or the appropriate noncancer hazard index exceeds 1.0, the construction HRA shall be

required to identify all feasible measures capable of reducing potential cancer and noncancer risks to an acceptable level to the extent feasible (i.e., below 10 in a million, a hazard index of 1.0, or 0.3 $\mu g/m^3$ of $PM_{2.5}$), including appropriate enforcement mechanisms. Examples of feasible measures include use of U.S. Environmental Protection Agency rated Tier 4 construction equipment, diesel particulate filters, and electric equipment.

The construction health risk assessment shall be submitted to UC Berkeley's Office of Environment, Health & Safety for review and approval. Measures identified in the health risk assessment shall be included in bid documents, purchase orders, contracts, and grading plans prepared for the development projects. Compliance with these measures shall be verified during regular construction site inspections

The Proposed Project would involve demolition and debris hauling, site preparation, grading and soil haul, and construction of a 374,590 square foot (SF) academic building on a site greater than one acre in size and for a construction period over 12 months. Per Mitigation Measure AIR-3.1 of the Certified EIR, a health risk assessment (HRA) was conducted to determine potential health risk impacts from construction of the Proposed Project to nearby air quality sensitive receptors (i.e., residences and schools). The following provides the background methodology used for the construction HRA for the Proposed Project.

The latest version of the Bay Area Air Quality Management District (BAAQMD) CEQA Air Quality Guidelines requires projects to evaluate the impacts of construction activities on air quality sensitive receptors (BAAQMD, 2017). Project construction is anticipated to take place starting at the beginning of May 2022 and be completed by October 2025 (approximately 878 workdays). As shown on Figure 1, the closest sensitive receptors to the Proposed Project are the multifamily residential buildings immediately north of the Proposed Project on Hearst Avenue. Other sensitive receptors within 1,000 feet of the site are the students at the Montessori Family School at 1850 Scenic Avenue to the northeast of the Proposed Project, as well as residences to the north, northeast, and west of the Proposed Project. These receptor locations could be potentially impacted from the proposed construction activities. This HRA considers the health impact to off-site sensitive receptors (nearby residences and schools) from construction emissions at the project site, including diesel equipment exhaust (diesel particulate matter or DPM) and particulate matter less than 2.5 microns ($PM_{2.5}$).

1.2 METHODOLOGY AND SIGNIFICANCE THRESHOLDS

For this HRA, the BAAQMD significance thresholds were deemed to be appropriate and the thresholds that were used for this project are shown below:

- Excess cancer risk of more than 10 in a million
- Non-cancer hazard index (chronic) greater than 1.0
- Incremental increase in average annual $PM_{2.5}$ concentration of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$)

The methodology used in this HRA is consistent with the following BAAQMD and the Office of Environmental Health Hazard Assessment (OEHHA) guidance documents:

- BAAQMD, 2017. *California Environmental Quality Act (CEQA) Air Quality Guidelines*. May 2017.
- BAAQMD, 2016. *Planning Healthy Places*. May 2016.
- BAAQMD, 2012. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. Version 3.0. May 2012.
- OEHHA. 2015. *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments*. February, 2015.

Potential exposures to DPM and $PM_{2.5}$ from Proposed Project construction were evaluated for off-site sensitive receptors in close proximity to the site. Pollutant concentrations were estimated using an air dispersion model, and excess lifetime cancer risks and chronic non-cancer hazard indexes were calculated. These risks were then compared to the significance thresholds adopted for this HRA.

It should be noted that these health impacts are based on conservative (i.e., health protective) assumptions. The United States Environmental Protection Agency (USEPA, 2005) and OEHHA note that conservative assumptions used in a risk assessment are intended to ensure that the estimated risks do not underestimate the actual risks. The use of conservative assumptions tends to produce upper-bound estimates of exposure and thus may overestimate the actual risk.

For residential-based receptors, the following conservative assumptions were used:

- It was assumed that maximum-exposed off-site residential receptors (both children and adults) stood outdoors and are subject to DPM at their residence for 8 hours per day, and approximately 260 construction days per year. In reality, California residents typically will spend on average 2 hours per day outdoors at their residences (USEPA, 2011), so actual exposures and risks would be significantly lower than those calculated in this HRA.

- The calculated risk for infants from third trimester to age 2 is multiplied by a factor of 10 to account for early life exposure and uncertainty in child versus adult exposure impacts (OEHHA, 2015).

For the maximum exposed school-based receptors, the following conservative assumptions were used:

- It was assumed that maximum exposed receptor (Montessori Family School, offering preschool through middle school programs; transitional kindergarten to grade 8; Montessori Family School, 2021) stood outside and are subject to DPM for 8 hours per weekday and approximately 180 school days per year (OEHHA, 2004). In reality, children and students are exposed to outdoor pollutant concentration levels for a portion of the day and are exposed to reduced indoor pollutant concentrations for the remaining hours.

- The calculated risk for children age 2 to age 16 is multiplied by a factor of 3 to account for early life exposure and uncertainty in child versus adult exposure impacts (OEHHA, 2015).

1.3 CONSTRUCTION EMISSIONS

Construction emissions were calculated as average daily emissions in pounds per day, using the proposed construction schedule and the latest version of California Emissions Estimation Model, known as CalEEMod Version 2020.4 (CAPCOA, 2021). DPM emissions were based on the CalEEMod construction runs, using annual exhaust PM_{10} construction emissions converted from tons per year to pounds (lbs) per day. The $PM_{2.5}$ emissions were taken from the CalEEMod output for exhaust $PM_{2.5}$ also converted to lbs per day.

The Certified EIR identified significant and unavoidable impacts at the program level during construction of development under the LRDP Update. The following mitigation measure was included in the Certified EIR for construction activities associated with LRDP Update:

> **Mitigation Measure AIR-2.1:** UC Berkeley shall use equipment that meets the United States Environmental Protection Agency Tier 4 Final emissions standards or higher for off-road diesel-powered construction equipment with more than 50 horsepower, unless it can be demonstrated to UC Berkeley that such equipment is not commercially available. For purposes of this mitigation measure, "commercially available" shall mean the availability of Tier 4 Final engines similar to the availability for other large-scale construction projects in the city occurring at the same time and taking into consideration factors such as (i) potential significant delays to critical-path timing of construction and (ii) geographic proximity to the project site of Tier 4 Final equipment. Where such equipment is not commercially available, as demonstrated by the construction contractor, Tier 4 interim equipment shall be used. Where Tier 4 interim equipment is not commercially available, as demonstrated by the contractor, Tier 3 equipment retrofitted with a California Air Resources Board's Level 3 Verified Diesel Emissions Control Strategy (VDECS) shall be used. The requirement to use Tier 4 Final equipment or higher for engines over 50 horsepower shall be identified in construction bids and the following shall also be completed:
>
> - Prior to construction, the project engineer shall ensure that all demolition and grading plans clearly show the requirement for United States Environmental Protection Agency Tier 4 Final or higher emissions standards for construction equipment over 50 horsepower.
> - During construction, the construction contractor shall maintain a list of all operating equipment in use over 20 hours on the construction site for verification by UC Berkeley.
> - The construction equipment list shall state the makes, models, and numbers of construction equipment on-site.
> - To the extent that equipment is available and cost-effective, contractors shall use electric, hybrid, or alternate-fueled off-road construction equipment.
> - Contractors shall use electric construction tools, such as saws, drills, and compressors, where grid electricity is available.
> - Construction activities shall be prohibited when the Air Quality Index (AQI), as measured by the closest Bay Area Quality Management District monitoring station (e.g., Berkeley Aquatic Center), is great than 150 for particulates and ozone in the project area.

- Contractors shall provide information on transit and ridesharing programs and services to construction employees. Additionally, meal options on-site and/or shuttles between the facility and nearby meal destinations for construction employees shall be provided.

Mitigation Measure AIR-2.1 of the Certified EIR is applicable to the Proposed Project and was included in the construction emissions modeling. Construction of the Proposed Project was assumed to take place over 3.4 years (878 workdays) beginning in May 2022 and to be completed by October 2025. The average daily emission rates from construction equipment used during Proposed Project construction were determined by dividing the annual average emissions for each construction year by the number of construction days per year for each calendar year of construction (i.e., 2022, 2023, 2024 and 2025). The off-site hauling emission rates were adjusted to evaluate localized emissions from the 0.43-mile haul route within 1,000 feet of the Proposed Project site. The CalEEMod construction emissions output and emission rate calculations are provided in Appendix A of the HRA.

1.4 DISPERSION MODELING

Air quality modeling was performed using the AERMOD atmospheric dispersion model to assess the impact of emitted compounds at nearby sensitive receptors. The model is a steady state Gaussian plume model and is an approved model by BAAQMD for estimating impacts from point and fugitive sources in simple and complex terrain. The on-site construction emissions for the project were modeled as poly-area sources. The off-site mobile sources were modeled as adjacent line volume sources. The model requires additional input parameters, including chemical emission data and local meteorology. Inputs for the construction emission rates are those described in Section 1.3. Meteorological data obtained from the California Air Resources Board (CARB) for the nearest representative meteorological station (Metro Oakland International Airport) with the five latest available years (2009 to 2013) of record were used to represent local weather conditions and prevailing winds (CARB, 2021).

The modeling analysis also considered the spatial distribution and elevation of each emitting source in relation to the sensitive receptors. To accommodate the model's Cartesian grid format, direction-dependent calculations were obtained by identifying the Universal Transverse Mercator (UTM) coordinates for each source location. In addition, national elevation dataset (NED) data for the area were obtained and included in the model runs to account for complex terrain. An emission release height of 4.15 meters was used as representative of the stack exhaust height for off-road construction equipment and diesel truck traffic, and an initial vertical dispersion parameter of 1.93 m was used, per CARB guidance (CARB, 2000).

To determine contaminant impacts during construction hours, the model's Season-Hour-Day (HRDOW) scalar option was invoked to predict flagpole-level concentrations (1.5 m for ground-floor receptors, 6.1 m for 2nd-floor, 9.1 m for 3rd floor, and 12.2 m for 4th floor) for construction emissions generated between the hours of 7:00 AM and 4:00 PM with a 1-hour lunch break.

A unit emission rate of 1 gram per second was used for the air dispersion model to represent both DPM and $PM_{2.5}$ construction emissions. The unit emission rates were proportioned over the poly-area sources for on-site construction emissions and divided between the volume sources for off-site hauling emissions. The maximum modeled concentrations from the output files were then multiplied by the emission rates calculated in Appendix A to obtain the maximum flagpole-level concentrations at the off-site maximum exposed individual resident

(MEIR). The MEIR is the multifamily building immediately north of the site on Hearst Avenue. The maximum exposed school receptor for the Montessori Family School is situated in the southwestern corner of the school property nearest the Proposed Project.

The receptor locations are presented in Figure 1. The air dispersion model output is presented in Appendix B. The DPM and $PM_{2.5}$ concentrations at the MEIR and maximum exposed school receptor are provided in Appendix C.

1.5 RISK CHARACTERIZATION

1.5.1 Carcinogenic Chemical Risk

A threshold of ten in a million ($10x10^{-6}$) has been established as a level posing no significant risk for exposures to carcinogens. Health risks associated with exposure to carcinogenic compounds can be defined in terms of the probability of developing cancer as a result of exposure to a chemical at a given concentration. The cancer risk probability is determined by multiplying the chemical's annual concentration by its cancer potency factor (CPF), a measure of the carcinogenic potential of a chemical when a dose is received through the inhalation pathway. It is an upper-limit estimate of the probability of contracting cancer as a result of continuous exposure to an ambient concentration of one microgram per cubic meter ($\mu g/m^3$) over a lifetime of 70 years.

Recent guidance from OEHHA recommends a refinement to the standard point estimate approach with the use of age-specific breathing rates and age sensitivity factors (ASFs) to assess risk for susceptible subpopulations such as children. For the inhalation pathway, the procedure requires the incorporation of several discrete variates to effectively quantify dose for each age group. Once determined, contaminant dose is multiplied by the cancer potency factor in units of inverse dose expressed in milligrams per kilogram per day $(mg/kg/day)^{-1}$ to derive the cancer risk estimate. Therefore, to accommodate the unique exposures associated with the sensitive receptors, the following dose algorithm was used.

$$\text{Dose}_{\text{AIR,per age group}} = \left(C_{air} \times EF \times \left[\frac{BR}{BW}\right] \times A \times CF\right)$$

Where:

$Dose_{AIR}$	=	dose by inhalation (mg/kg-day), per age group
C_{air}	=	concentration of contaminant in air ($\mu g/m^3$)
EF	=	exposure frequency (number of days/365 days)
BR/BW	=	daily breathing rate normalized to body weight (L/kg-day)
A	=	inhalation absorption factor (default = 1)
CF	=	conversion factor ($1x10^{-6}$, µg to mg, L to m^3)

The inhalation absorption factor (A) is a unitless factor that is only used if the cancer potency factor included a correction for absorption across the lung. The default value of 1 was used for this assessment. For residential receptors, the exposure frequency (EF) of 0.96 is used to represent 350 days per year to allow for a two-week period away from home each year (OEHHA, 2015). For student receptors at the Montessori Family School, which operates as a preschool through grade 8 school on a traditional academic calendar, an EF of 0.49 is used to represent 180 days per year for students (OEHHA, 2004).

For construction analysis, the exposure duration spans the length of construction (e.g., 878 workdays). As the length of construction is more than 2 years, the third trimester, 0-2, and 2-9 age bins apply to the construction analysis for the off-site residential receptors. For residential receptors, the 95th percentile daily breathing rates (BR/BW), exposure duration (ED), age sensitivity factors (ASFs), and fraction of time at home (FAH) for the various age groups are provided herein:

Age Groups	BR/BW (L/kg-day)	ED	ASF	FAH
Third trimester	361	0.25	10	0.85
0-2 age group	1,090	2.0	10	0.85
2-9 age group	861	1.12	3	0.72

For students at the Montessori Family School, the 95th percentile 8-hour breathing rates (moderate intensity activity), ED, and ASF for the 2 to 16-year-old age group is provided herein:

Age Groups	BR/BW (L/kg-day)	ED	ASF
2–16 age group	520	3.4	3

To calculate the overall cancer risk, the risk for each appropriate age group is calculated per the following equation:

$$\text{Cancer Risk}_{\text{AIR}} = \text{Dose}_{\text{AIR}} \times \text{CPF} \times \text{ASF} \times \text{FAH} \times \frac{\text{ED}}{AT}$$

Where:

Dose_{AIR}	=	dose by inhalation (mg/kg-day), per age group
CPF	=	cancer potency factor, chemical-specific $(\text{mg/kg-day})^{-1}$
ASF	=	age sensitivity factor, per age group
FAH	=	fraction of time at home, per age group (for residential receptors only)
ED	=	exposure duration (years)
AT	=	averaging time period over which exposure duration is averaged (70 years)

The CPFs used in the assessment were obtained from OEHHA guidance. The excess lifetime cancer risks during the construction period to the maximally exposed resident and students were calculated based on the factors provided above. The cancer risks for each age group are summed to estimate the total cancer risk for each toxic chemical species. The final step converts the cancer risk in scientific notation to a whole number that expresses the cancer risk in "chances per million" by multiplying the cancer risk by a factor of $1x10^6$ (i.e. 1 million).

The calculated results are provided in Appendix C.

1.5.2 Non-Carcinogenic Hazards

An evaluation was also conducted of the potential non-cancer effects of chronic chemical exposures. Adverse health effects are evaluated by comparing the annual receptor level (flagpole) concentration of each chemical compound with the appropriate reference exposure limit (REL). Available RELs promulgated by OEHHA were considered in the assessment.

The hazard index approach was used to quantify non-carcinogenic impacts. The hazard index assumes that chronic sub-threshold exposures adversely affect a specific organ or organ system (toxicological endpoint). Target organs presented in regulatory guidance were used for each discrete chemical exposure. To calculate the hazard index, each chemical concentration or dose is divided by the appropriate toxicity value. This ratio is summed for compounds affecting the same toxicological endpoint. A health hazard is presumed to exist where the total equals or exceeds one.

The chronic hazard analysis for DPM is provided in Appendix C. The calculations contain the relevant exposure concentrations and corresponding reference dose values used in the evaluation of non-carcinogenic exposures.

1.5.3 Criteria Pollutants

The BAAQMD incorporated $PM_{2.5}$ into the District's CEQA significance thresholds due to recent studies that show adverse health impacts from exposure to this pollutant. An incremental increase of greater than 0.3 $\mu g/m^3$ for the annual average $PM_{2.5}$ concentration is considered to be a significant impact.

1.6 CONSTRUCTION HRA RESULTS

The calculated results are provided in Appendix C and the results are summarized in Table 1.

TABLE 1. CONSTRUCTION RISK SUMMARY

Receptor	Cancer Risk (per million)	Chronic Hazards	$PM_{2.5}$ ($\mu g/m^3$)
Maximum Exposed Individual Resident (MEIR)	1.2	0.004	0.008
Maximum Exposed School Receptor – Montessori Family School (Student)	0.1	0.003	0.005
BAAQMD Threshold	10	1.0	0.30
Exceeds Threshold?	**No**	**No**	**No**

Note: Modeling includes Mitigation Measure AIR-2.1 of the Certified EIR, which requires use of Tier 4 Final equipment for engines 50 horsepower and higher.

Cancer risk for the MEIR from project-related construction emissions was calculated to be 1.2 in a million, which is below the significance threshold of 10 in a million. In accordance with the latest 2015 OEHHA guidance, the calculated total cancer risk conservatively assumes that the risk for the MEIR consists of a pregnant woman in the third trimester that subsequently gives birth to an infant during the approximately 3.4-year construction period; therefore, calculated risk values for the first 2.25 years were multiplied by a factor of 10 and the remaining risk values by a factor of 3. In addition, it was conservatively assumed that the residents were outdoors 8 hours a day and exposed to all of the daily construction emissions. Additionally, the cancer risk for the maximum exposed school receptor at Montessori Family School is 0.1 in a million, which is well below the significance threshold of 10 in a million.

For non-carcinogenic effects, the chronic hazard index identified for each toxicological endpoint totaled less than one for all off-site sensitive receptors. Therefore, chronic non-carcinogenic hazards are less than significant. Additionally, the maximum annual $PM_{2.5}$ concentrations would not exceed the BAAQMD significance threshold of 0.3 micrograms per cubic meter ($\mu g/m^3$) for all off-site sensitive receptors.

As noted in Section 1.3, Mitigation Measure AIR-2.1 of the Certified EIR was included in the construction modeling used to determine the health risks provided in Table 1. The results indicate that, with Mitigation Measure AIR-2.1 of the Certified EIR, excess cancer risk would be less than the BAAQMD's significance thresholds for the MEIR and maximum exposed school receptor. The project would not expose off-site sensitive receptors to substantial concentrations of air pollutant emissions during construction and impacts would be less than significant with mitigation. Therefore, the Proposed Project would not result in any new significant impacts, and no new mitigation measures are required.

2. References

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Source: Nearmap, 2021, (Imagery date: 10/28/2021).

Project Site Truck Route

Maximum Exposed Individual Resident (MEIR)

Maximum Exposed School Receptor

Receptors

Figure 1

Project Site and Off-site Receptor Locations

Appendix A. Emission Rate Calculations

CalEEMod Project Characteristics Inputs (Construction): The Gateway

Name:	The Gateway
County:	Alameda
Climate Zone:	5
Land Use Setting:	Urban
Air Basin:	San Franicisco Bay
Air District:	BAAQMD

Total Project Site Area:	4.70	acres
Building Footprint	62,000	SF

Project Components	SQFT	Acres
University Building	374,590	1.42
Non-parking Asphalt	26,750	0.61
Hardscape	32,000	0.73
Landscaping	36,500	0.84

3.61

CalEEMod Land Use Inputs*

Land Use	Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Land Use Square Feet
University Building	Education	University/College (4 yrs)	0.0 **	Student	4.09	374,590
Non-parking asphalt	Parking	Other Non-asphalt	0.61	acres	0.61	26,750
					4.70	

**Based on information provided by and CalEEMod defaults verified by the University.*

*** Set to 1 in model, as CalEEMod does not run with a unit of 0.*

Demolition and Hauling

Component	Amount to be Demolished (CYs)	Amount to be Demolished (Tons)*	Haul Truck Capacity (tons)	Haul Distance (miles)*	Total Round Trips	Total 1-Way Trip Ends
AC/PCC		24,198	16	35	1,512	**3,025**

Soil Hauling Keller Landfill, Antioch

Component	Total Soil Haul Import (CY)*	Total Soil Haul Export (CY)*	Haul Truck Capacity (CY)*	Haul Distance (miles)	Total Round Trips	Total Trip Ends
Soil	6,013	50,613	12	20	4,719	9,438
AC/PCC	3,185		12	20	265	531
Total	9,198	50,613				**9,969**

Architectural Coating

Percentage of Buildings' Interior Painted:*	100%
Percentage of Buildings' Exterior Painted:*	5%

** Per the University*

BAAQMD Regulation 8 Rule 3

Interior Paint VOC content:	150	grams per liter
Exterior Paint VOC content:	150	grams per liter

Uses	Land Use Square Feet	CalEEMod Paintable Surface Area Factor	Total Paintable Surface Area[2]	Paintable Interior Area[1]	Paintable Exterior Area[1]	Parking Lot Area
University Building	374,590	2.0	749,180	561,885	9,365	
Non-parking Asphalt	26,750	0.06	1,605			1,605

**CalEEMod methodology calculates the paintable interior and exterior areas by multiplying the total paintable surface area by 75 and 25 percent, respectively. Architectural coatings for the parking lot is based on CalEEMod methodology applied to a surface parking lot (i.e., striping), in which 6% of surface area is painted.*

Construction - Unmitigated Run

BAAQMD Basic Control Measures

Replace Ground Cover	PM10:	5	% Reduction
	PM25:	5	% Reduction
Water Exposed Area	Frequency:	2	per day
	PM10:	55	% Reduction
	PM25:	55	% Reduction
Unpaved Roads	Vehicle Speed:	15	mph
Clean Paved Road		9	% PM Reduction

Construction Phasing: The Gateway

Schedule Per the University

Phase Name	Start Date	End Date	Workdays*	Total Calendar Days
Make-ready work	5/15/2022	9/30/2022	100	138
Demolition (concrete/asphalt/clearing)	10/31/2022	11/11/2022	10	11
Demolition Debris Haul (if applicable)	10/31/2022	11/11/2022	10	11
Site Preparation + Haul	11/11/2022	1/5/2023	40	55
Shelf 1 Excavation + Haul	2/23/2023	3/7/2023	9	12
Shelf 2 Excavation + Haul	3/22/2023	4/15/2023	18	24
Complete Demo + Haul	4/13/2023	5/10/2023	20	27
Backfill + Foundation Prep	5/11/2023	5/24/2023	10	13
Building Construction	5/18/2023	10/25/2025	637	891
Architectural Coating/Painting	6/7/2024	4/8/2025	218	305
Asphalt Paving	8/1/2025	8/11/2025	7	10
Finishing/Landscaping	3/21/2025	8/11/2025	102	143
Rough Grading/Final Grading	4/1/2025	9/1/2025	110	153

**5-day work week*

Adjusted Schedule to Account for Shared Equipment

Phase Name	Start Date	End Date	Workdays	Total Calendar Days
Make-Ready Work	5/15/2022	9/30/2022	100	138
Demolition	10/31/2022	11/11/2022	10	11
Site Preparation and Grading	11/11/2022	5/24/2023	139	194
Demolition Hauling	*11/11/2022*	*5/24/2023*	139	
Soil Hauling	*11/11/2022*	*5/24/2023*	139	
Building Construction	5/18/2023	10/25/2025	637	891
Architectural Coating	6/7/2024	4/8/2025	218	305
Paving	8/1/2025	8/11/2025	7	10
Finishing/Landscaping	3/21/2025	8/11/2025	102	143
Rough Grading/Final Grading	4/1/2025	9/1/2025	110	153

CalEEMod Construction Off-Road Equipment Inputs*

*Based on information provided by and CalEEMod defaults verified by the University.

Electric equipment was omitted from health risk evaluation.

Equipment Type	CalEEMod Equipment Type	Unit Amount	Average Hours/Day	HP	LF	CalEEMod Vendor Trips
Make Ready Work						**Default**
Concrete/Industrial Saws	Concrete/Industrial Saws	2	6	5	0.73	
Excavators (10 days)[1]	Excavators	2	1	190	0.38	
Woodchipper	Other Construction Equipment	1	8	30	0.42	
Plate Compactors	Plate Compactors	1	8	8	0.43	
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	2	6	97	0.37	
Demolition						Default+4
Concrete/Industrial Saws	Concrete/Industrial Saws	1	6	5	0.73	
Plate Compactors	Plate Compactors	1	8	8	0.43	
Sweepers	Sweepers/Scrubbers	1	4	64	0.46	
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	3	7	97	0.37	
Water Trucks[2]						4
Site Preparation and Grading						Default+4
Concrete/Industrial Saws	Concrete/Industrial Saws	1	8	5	0.73	
Chainsaw	Concrete/Industrial Saws	2	4	3	0.73	
Excavators	Excavators	2	8	300	0.38	
Plate Compactors	Plate Compactors	1	8	8	0.43	
Mini Dozer	Rubber Tired Dozers	1	8	95	0.40	
Dozer	Rubber Tired Dozers	1	7	150	0.40	
Sweepers	Sweepers/Scrubbers	1	4	64	0.46	
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	1	7	97	0.37	
Water Trucks[2]						4
Building Construction						Default+4
Aerial Lift	Aerial Lift	2	4	45	0.31	
Tiedown Drill Rig (80 days)[1]	Bore/Drill Rigs	1	1	200	0.50	
Crawler Crane (100 days)[1]	Crane	1	1	231	0.29	
Decking cutoff saws	Concrete/Industrial Saws	2	4	6	0.73	
Forklifts	Forklifts	2	7	89	0.20	
Sweepers	Sweepers/Scrubbers	1	4	64	0.46	
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	1	6	97	0.37	
Water Trucks[2]						4
Painting						**Default**
Air Compressors	Air Compressors		Electric			
Finishing/Landscaping						**Default**
Forklift	Forklifts	1	4	75	0.20	
Plate Compactors	Plate Compactors	1	8	8	0.43	
Rollers	Rollers	1	8	80	0.38	
Bobcat Loader	Skid Steer Loader	1	8	70	0.37	
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	1	8	97	0.37	
Rough Grading/Final Grading						**Default**
Mobile Crane	Crane	1	4	150	0.29	
Graders	Graders	1	8	187	0.41	
Roller/Compactor	Rollers	1	4	140	0.38	
Bulldozer	Rubber Tired Dozers	1	8	150	0.40	
Bobcat Loader	Skid Steer Loader	1	8	70	0.37	
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	2	7	97	0.37	
Paving						**Default**
Pavers	Pavers	1	8	175	0.42	
Roller/Compactor	Rollers	1	8	80	0.38	
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	1	8	97	0.37	

[1] The average hours/day was adjusted for equipment used for only a portion of the construction phase.

[2] Assume 4 water truck trips per truck per day.

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
University/College (4yr)	1.00	Student	4.09	374,590.00	0
Other Asphalt Surfaces	0.61	Acre	0.61	26,570.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2025
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - The University subscribes to EBCE's Brilliant 100 plan, which provides 100% carbon free electricity.

Land Use - Provided by University. See assumptions file.

Construction Phase - Provided by University

Off-road Equipment - Provided by University

Off-road Equipment - Provided by University

Off-road Equipment - Provided by University

Off-road Equipment - only haul trucks

Off-road Equipment - Only hauling trucks

Off-road Equipment - Provided by University

Off-road Equipment - Provided by University

Off-road Equipment - Provided by University

Off-road Equipment - Provided by University

Trips and VMT - Provided by University

Demolition -

Grading -

Architectural Coating - See assumptions file

Construction Off-road Equipment Mitigation - LRDP MM AIR-2.1 and BAAQMD Basic Control Measures for Fugitive Dust

Off-road Equipment - Only haul trucks

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	187,295.00	9,365.00
tblArchitecturalCoating	ConstArea_Parking	1,594.00	1,605.00
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	18.00	218.00
tblConstructionPhase	NumDays	230.00	637.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	139.00
tblConstructionPhase	NumDays	8.00	110.00
tblConstructionPhase	NumDays	18.00	7.00
tblConstructionPhase	NumDays	18.00	102.00
tblConstructionPhase	NumDays	5.00	139.00
tblConstructionPhase	NumDays	5.00	139.00
tblGrading	MaterialExported	0.00	50,613.00
tblGrading	MaterialImported	0.00	9,198.00
tblLandUse	LandUseSquareFeet	183.80	374,590.00
tblLandUse	LandUseSquareFeet	26,571.60	26,570.00
tblLandUse	LotAcreage	0.00	4.09
tblOffRoadEquipment	HorsePower	81.00	5.00
tblOffRoadEquipment	HorsePower	130.00	175.00
tblOffRoadEquipment	HorsePower	247.00	150.00
tblOffRoadEquipment	HorsePower	247.00	95.00
tblOffRoadEquipment	HorsePower	247.00	150.00
tblOffRoadEquipment	HorsePower	63.00	45.00
tblOffRoadEquipment	HorsePower	221.00	200.00
tblOffRoadEquipment	HorsePower	81.00	5.00
tblOffRoadEquipment	HorsePower	81.00	5.00
tblOffRoadEquipment	HorsePower	81.00	3.00
tblOffRoadEquipment	HorsePower	81.00	6.00
tblOffRoadEquipment	HorsePower	231.00	150.00
tblOffRoadEquipment	HorsePower	158.00	190.00
tblOffRoadEquipment	HorsePower	158.00	300.00
tblOffRoadEquipment	HorsePower	89.00	75.00
tblOffRoadEquipment	HorsePower	172.00	30.00
tblOffRoadEquipment	HorsePower	80.00	140.00
tblOffRoadEquipment	HorsePower	65.00	70.00
tblOffRoadEquipment	HorsePower	65.00	70.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	1.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblTripsAndVMT	HaulingTripLength	20.00	35.00
tblTripsAndVMT	HaulingTripNumber	2,393.00	3,025.00
tblTripsAndVMT	HaulingTripNumber	5,914.00	9,969.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	70.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0698	0.8583	0.6042	2.5600e-003	0.3934	0.0278	0.4212	0.1442	0.0258	0.1700	0.0000	239.1782	239.1782	0.0298	0.0232	246.8212
2023	0.1656	2.1404	1.6387	8.3700e-003	1.1148	0.0574	1.1723	0.4309	0.0532	0.4841	0.0000	787.6789	787.6789	0.0749	0.0802	813.4607
2024	1.0390	1.0476	1.3867	4.5300e-003	0.2507	0.0319	0.2826	0.0680	0.0294	0.0975	0.0000	419.0649	419.0649	0.0414	0.0286	428.6305
2025	0.6253	1.7549	2.1987	5.4700e-003	0.5999	0.0636	0.6635	0.2454	0.0586	0.3040	0.0000	497.2626	497.2626	0.0843	0.0229	506.1784
Maximum	**1.0390**	**2.1404**	**2.1987**	**8.3700e-003**	**1.1148**	**0.0636**	**1.1723**	**0.4309**	**0.0586**	**0.4841**	**0.0000**	**787.6789**	**787.6789**	**0.0843**	**0.0802**	**813.4607**

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					
2022	0.0398	0.5301	0.7143	2.5600e-003	0.1953	9.8200e-003	0.2051	0.0692	9.3400e-003	0.0786	0.0000	239.1781	239.1781	0.0298	0.0232	246.8211
2023	0.0920	1.4140	1.9162	8.3700e-003	0.6132	0.0137	0.6269	0.2222	0.0132	0.2355	0.0000	787.6787	787.6787	0.0749	0.0802	813.4605
2024	0.9985	0.6525	1.4493	4.5300e-003	0.2320	5.6900e-003	0.2377	0.0634	5.4600e-003	0.0689	0.0000	419.0647	419.0647	0.0414	0.0286	428.6304
2025	0.5294	0.7554	2.4046	5.4700e-003	0.3612	8.0100e-003	0.3692	0.1337	7.8200e-003	0.1415	0.0000	497.2623	497.2623	0.0843	0.0229	506.1781
Maximum	**0.9985**	**1.4140**	**2.4046**	**8.3700e-003**	**0.6132**	**0.0137**	**0.6269**	**0.2222**	**0.0132**	**0.2355**	**0.0000**	**787.6787**	**787.6787**	**0.0843**	**0.0802**	**813.4605**

	ROG	NOx	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	**12.64**	**42.22**	**-11.26**	**0.00**	**40.57**	**79.41**	**43.34**	**45.01**	**78.53**	**50.31**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	5-15-2022	8-14-2022	0.1608	0.0674
2	8-15-2022	11-14-2022	0.1891	0.1065
3	11-15-2022	2-14-2023	1.1042	0.7668
4	2-15-2023	5-14-2023	0.9545	0.6436
5	5-15-2023	8-14-2023	0.3973	0.2462
6	8-15-2023	11-14-2023	0.3054	0.1853
7	11-15-2023	2-14-2024	0.3031	0.1883
8	2-15-2024	5-14-2024	0.2865	0.1796
9	5-15-2024	8-14-2024	0.5954	0.4861
10	8-15-2024	11-14-2024	0.7014	0.5922
11	11-15-2024	2-14-2025	0.6987	0.5950
12	2-15-2025	5-14-2025	0.8211	0.4954
13	5-15-2025	8-14-2025	0.9139	0.3391
14	8-15-2025	9-30-2025	0.2321	0.1087
		Highest	1.1042	0.7668

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Make Ready Work	Trenching	5/15/2022	9/30/2022	5	100	
2	Demolition	Demolition	10/31/2022	11/11/2022	5	10	
3	Demolition Hauling	Demolition	11/11/2022	5/24/2023	5	139	
4	Site Preparation and Grading	Site Preparation	11/11/2022	5/24/2023	5	139	
5	Soil Hauling	Site Preparation	11/11/2022	5/24/2023	5	139	
6	Building Construction	Building Construction	5/18/2023	10/25/2025	5	637	
7	Architectural Coatings/Painting	Architectural Coating	6/7/2024	4/8/2025	5	218	
8	Finishing/Landscaping	Paving	3/21/2025	8/11/2025	5	102	
9	Rough Grading/Final Grading	Grading	4/1/2025	9/1/2025	5	110	
10	Paving	Paving	8/1/2025	8/11/2025	5	7	

Acres of Grading (Site Preparation Phase): 130.31

Acres of Grading (Grading Phase): 110

Acres of Paving: 0.61

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 561,885; Non-Residential Outdoor: 9,365; Striped Parking Area: 1,605 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Make Ready Work	Concrete/Industrial Saws	2	6.00	5	0.73
Make Ready Work	Excavators	2	1.00	190	0.38
Make Ready Work	Other Construction Equipment	1	8.00	30	0.42
Make Ready Work	Plate Compactors	1	8.00	8	0.43
Make Ready Work	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Demolition	Concrete/Industrial Saws	1	6.00	5	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Plate Compactors	1	8.00	8	0.43
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Sweepers/Scrubbers	1	4.00	64	0.46
Demolition	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Demolition Hauling	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition Hauling	Excavators	0	8.00	158	0.38
Demolition Hauling	Graders	0	8.00	187	0.41
Demolition Hauling	Rubber Tired Dozers	0	8.00	247	0.40
Demolition Hauling	Tractors/Loaders/Backhoes	0	8.00	97	0.37

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Site Preparation and Grading	Concrete/Industrial Saws	1	8.00	5	0.73
Site Preparation and Grading	Concrete/Industrial Saws	2	4.00	3	0.73
Site Preparation and Grading	Cranes	0	7.00	231	0.29
Site Preparation and Grading	Excavators	2	8.00	300	0.38
Site Preparation and Grading	Forklifts	0	8.00	89	0.20
Site Preparation and Grading	Generator Sets	0	8.00	84	0.74
Site Preparation and Grading	Plate Compactors	1	8.00	8	0.43
Site Preparation and Grading	Rubber Tired Dozers	1	8.00	95	0.40
Site Preparation and Grading	Rubber Tired Dozers	1	7.00	150	0.40
Site Preparation and Grading	Sweepers/Scrubbers	1	4.00	64	0.46
Site Preparation and Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation and Grading	Welders	0	8.00	46	0.45
Soil Hauling	Cement and Mortar Mixers	0	6.00	9	0.56
Soil Hauling	Pavers	0	8.00	130	0.42
Soil Hauling	Paving Equipment	0	6.00	132	0.36
Soil Hauling	Rollers	0	6.00	80	0.38
Soil Hauling	Rubber Tired Dozers	0	8.00	247	0.40
Soil Hauling	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Aerial Lifts	2	4.00	45	0.31
Building Construction	Air Compressors	0	6.00	78	0.48
Building Construction	Bore/Drill Rigs	1	1.00	200	0.50
Building Construction	Concrete/Industrial Saws	2	4.00	6	0.73
Building Construction	Cranes	1	1.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Sweepers/Scrubbers	1	4.00	64	0.46
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Architectural Coatings/Painting	Air Compressors	0	6.00	78	0.48
Finishing/Landscaping	Cement and Mortar Mixers	0	6.00	9	0.56
Finishing/Landscaping	Forklifts	1	4.00	75	0.20
Finishing/Landscaping	Pavers	0	8.00	130	0.42
Finishing/Landscaping	Paving Equipment	0	6.00	132	0.36
Finishing/Landscaping	Plate Compactors	1	8.00	8	0.43
Finishing/Landscaping	Rollers	1	8.00	80	0.38
Finishing/Landscaping	Skid Steer Loaders	1	8.00	70	0.37
Finishing/Landscaping	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Rough Grading/Final Grading	Cranes	1	4.00	150	0.29
Rough Grading/Final Grading	Excavators	0	8.00	158	0.38
Rough Grading/Final Grading	Graders	1	8.00	187	0.41
Rough Grading/Final Grading	Rollers	1	4.00	140	0.38
Rough Grading/Final Grading	Rubber Tired Dozers	1	8.00	150	0.40
Rough Grading/Final Grading	Skid Steer Loaders	1	8.00	70	0.37
Rough Grading/Final Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	1	8.00	175	0.42
Paving	Paving Equipment	0	6.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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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
Make Ready Work	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition Hauling	0	0.00	0.00	3,025.00	10.80	7.30	35.00	LD_Mix	HDT_Mix	HHDT
Site Preparation and Grading	10	25.00	70.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Soil Hauling	0	0.00	0.00	9,969.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	168.00	66.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coatings/Painting	0	34.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Finishing/Landscaping	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Rough Grading/Final Grading	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

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3.2 Make Ready Work - 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	0.0269	0.2130	0.2532	4.0000e-004		0.0118	0.0118		0.0109	0.0109	0.0000	34.2104	34.2104	0.0107	0.0000	34.4784
Total	**0.0269**	**0.2130**	**0.2532**	**4.0000e-004**		**0.0118**	**0.0118**		**0.0109**	**0.0109**	**0.0000**	**34.2104**	**34.2104**	**0.0107**	**0.0000**	**34.4784**

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	2.8100e-003	2.0200e-003	0.0240	7.0000e-005	7.9100e-003	4.0000e-005	7.9500e-003	2.1000e-003	4.0000e-005	2.1400e-003	0.0000	6.3551	6.3551	2.0000e-004	1.9000e-004	6.4158
Total	**2.8100e-003**	**2.0200e-003**	**0.0240**	**7.0000e-005**	**7.9100e-003**	**4.0000e-005**	**7.9500e-003**	**2.1000e-003**	**4.0000e-005**	**2.1400e-003**	**0.0000**	**6.3551**	**6.3551**	**2.0000e-004**	**1.9000e-004**	**6.4158**

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	0.0160	0.0817	0.2786	4.0000e-004		4.8600e-003	4.8600e-003		4.5500e-003	4.5500e-003	0.0000	34.2103	34.2103	0.0107	0.0000	34.4783
Total	**0.0160**	**0.0817**	**0.2786**	**4.0000e-004**		**4.8600e-003**	**4.8600e-003**		**4.5500e-003**	**4.5500e-003**	**0.0000**	**34.2103**	**34.2103**	**0.0107**	**0.0000**	**34.4783**

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	2.8100e-003	2.0200e-003	0.0240	7.0000e-005	7.2900e-003	4.0000e-005	7.3400e-003	1.9500e-003	4.0000e-005	1.9900e-003	0.0000	6.3551	6.3551	2.0000e-004	1.9000e-004	6.4158
Total	**2.8100e-003**	**2.0200e-003**	**0.0240**	**7.0000e-005**	**7.2900e-003**	**4.0000e-005**	**7.3400e-003**	**1.9500e-003**	**4.0000e-005**	**1.9900e-003**	**0.0000**	**6.3551**	**6.3551**	**2.0000e-004**	**1.9000e-004**	**6.4158**

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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	2.8500e-003	0.0278	0.0352	5.0000e-005		1.5300e-003	1.5300e-003		1.4100e-003	1.4100e-003	0.0000	4.3015	4.3015	1.3600e-003	0.0000	4.3354
Total	**2.8500e-003**	**0.0278**	**0.0352**	**5.0000e-005**		**1.5300e-003**	**1.5300e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**4.3015**	**4.3015**	**1.3600e-003**	**0.0000**	**4.3354**

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	4.0000e-005	1.1000e-003	3.1000e-004	0.0000	1.3000e-004	1.0000e-005	1.4000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4038	0.4038	1.0000e-005	6.0000e-005	0.4220
Worker	2.1000e-004	1.5000e-004	1.8000e-003	1.0000e-005	5.9000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4766	0.4766	2.0000e-005	1.0000e-005	0.4812
Total	**2.5000e-004**	**1.2500e-003**	**2.1100e-003**	**1.0000e-005**	**7.2000e-004**	**1.0000e-005**	**7.4000e-004**	**2.0000e-004**	**1.0000e-005**	**2.1000e-004**	**0.0000**	**0.8804**	**0.8804**	**3.0000e-005**	**7.0000e-005**	**0.9032**

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	8.5000e-004	6.9700e-003	0.0366	5.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	4.3015	4.3015	1.3600e-003	0.0000	4.3354
Total	**8.5000e-004**	**6.9700e-003**	**0.0366**	**5.0000e-005**		**1.3000e-004**	**1.3000e-004**		**1.3000e-004**	**1.3000e-004**	**0.0000**	**4.3015**	**4.3015**	**1.3600e-003**	**0.0000**	**4.3354**

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	4.0000e-005	1.1000e-003	3.1000e-004	0.0000	1.2000e-004	1.0000e-005	1.3000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4038	0.4038	1.0000e-005	6.0000e-005	0.4220
Worker	2.1000e-004	1.5000e-004	1.8000e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4766	0.4766	2.0000e-005	1.0000e-005	0.4812
Total	**2.5000e-004**	**1.2500e-003**	**2.1100e-003**	**1.0000e-005**	**6.7000e-004**	**1.0000e-005**	**6.8000e-004**	**1.9000e-004**	**1.0000e-005**	**2.0000e-004**	**0.0000**	**0.8804**	**0.8804**	**3.0000e-005**	**7.0000e-005**	**0.9032**

3.4 Demolition Hauling - 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					0.0671	0.0000	0.0671	0.0102	0.0000	0.0102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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**	**0.0671**	**0.0000**	**0.0671**	**0.0102**	**0.0000**	**0.0102**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	2.8500e-003	0.1092	0.0195	4.2000e-004	0.0116	1.0500e-003	0.0127	3.1900e-003	1.0100e-003	4.2000e-003	0.0000	41.2093	41.2093	8.9000e-004	6.5100e-003	43.1713
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.8500e-003**	**0.1092**	**0.0195**	**4.2000e-004**	**0.0116**	**1.0500e-003**	**0.0127**	**3.1900e-003**	**1.0100e-003**	**4.2000e-003**	**0.0000**	**41.2093**	**41.2093**	**8.9000e-004**	**6.5100e-003**	**43.1713**

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					0.0287	0.0000	0.0287	4.3400e-003	0.0000	4.3400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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**	**0.0287**	**0.0000**	**0.0287**	**4.3400e-003**	**0.0000**	**4.3400e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	2.8500e-003	0.1092	0.0195	4.2000e-004	0.0108	1.0500e-003	0.0119	3.0000e-003	1.0100e-003	4.0100e-003	0.0000	41.2093	41.2093	8.9000e-004	6.5100e-003	43.1713
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.8500e-003**	**0.1092**	**0.0195**	**4.2000e-004**	**0.0108**	**1.0500e-003**	**0.0119**	**3.0000e-003**	**1.0100e-003**	**4.0100e-003**	**0.0000**	**41.2093**	**41.2093**	**8.9000e-004**	**6.5100e-003**	**43.1713**

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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					0.1919	0.0000	0.1919	0.0291	0.0000	0.0291	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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**	**0.1919**	**0.0000**	**0.1919**	**0.0291**	**0.0000**	**0.0291**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.2100e-003	0.2428	0.0461	1.1500e-003	0.0332	2.1900e-003	0.0354	9.1400e-003	2.0900e-003	0.0112	0.0000	112.1975	112.1975	2.3800e-003	0.0177	117.5397
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.2100e-003**	**0.2428**	**0.0461**	**1.1500e-003**	**0.0332**	**2.1900e-003**	**0.0354**	**9.1400e-003**	**2.0900e-003**	**0.0112**	**0.0000**	**112.1975**	**112.1975**	**2.3800e-003**	**0.0177**	**117.5397**

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					0.0820	0.0000	0.0820	0.0124	0.0000	0.0124	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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**	**0.0820**	**0.0000**	**0.0820**	**0.0124**	**0.0000**	**0.0124**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.2100e-003	0.2428	0.0461	1.1500e-003	0.0310	2.1900e-003	0.0332	8.5900e-003	2.0900e-003	0.0107	0.0000	112.1975	112.1975	2.3800e-003	0.0177	117.5397
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.2100e-003**	**0.2428**	**0.0461**	**1.1500e-003**	**0.0310**	**2.1900e-003**	**0.0332**	**8.5900e-003**	**2.0900e-003**	**0.0107**	**0.0000**	**112.1975**	**112.1975**	**2.3800e-003**	**0.0177**	**117.5397**

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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					0.2723	0.0000	0.2723	0.1192	0.0000	0.1192	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0243	0.2192	0.1956	5.1000e-004		0.0107	0.0107		9.8100e-003	9.8100e-003	0.0000	44.8858	44.8858	0.0144	0.0000	45.2456
Total	**0.0243**	**0.2192**	**0.1956**	**5.1000e-004**	**0.2723**	**0.0107**	**0.2830**	**0.1192**	**9.8100e-003**	**0.1290**	**0.0000**	**44.8858**	**44.8858**	**0.0144**	**0.0000**	**45.2456**

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	2.5600e-003	0.0690	0.0194	2.6000e-004	8.2800e-003	7.0000e-004	8.9800e-003	2.3900e-003	6.7000e-004	3.0600e-003	0.0000	25.4397	25.4397	3.8000e-004	3.8100e-003	26.5856
Worker	1.2700e-003	9.1000e-004	0.0108	3.0000e-005	3.5600e-003	2.0000e-005	3.5800e-003	9.5000e-004	2.0000e-005	9.6000e-004	0.0000	2.8598	2.8598	9.0000e-005	8.0000e-005	2.8871
Total	**3.8300e-003**	**0.0699**	**0.0302**	**2.9000e-004**	**0.0118**	**7.2000e-004**	**0.0126**	**3.3400e-003**	**6.9000e-004**	**4.0200e-003**	**0.0000**	**28.2995**	**28.2995**	**4.7000e-004**	**3.8900e-003**	**29.4727**

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					0.1164	0.0000	0.1164	0.0510	0.0000	0.0510	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2200e-003	0.0431	0.2789	5.1000e-004		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	44.8857	44.8857	0.0144	0.0000	45.2455
Total	**7.2200e-003**	**0.0431**	**0.2789**	**5.1000e-004**	**0.1164**	**1.0100e-003**	**0.1174**	**0.0510**	**1.0100e-003**	**0.0520**	**0.0000**	**44.8857**	**44.8857**	**0.0144**	**0.0000**	**45.2455**

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	2.5600e-003	0.0690	0.0194	2.6000e-004	7.7500e-003	7.0000e-004	8.4500e-003	2.2700e-003	6.7000e-004	2.9400e-003	0.0000	25.4397	25.4397	3.8000e-004	3.8100e-003	26.5856
Worker	1.2700e-003	9.1000e-004	0.0108	3.0000e-005	3.2800e-003	2.0000e-005	3.3000e-003	8.8000e-004	2.0000e-005	9.0000e-004	0.0000	2.8598	2.8598	9.0000e-005	8.0000e-005	2.8871
Total	**3.8300e-003**	**0.0699**	**0.0302**	**2.9000e-004**	**0.0110**	**7.2000e-004**	**0.0118**	**3.1500e-003**	**6.9000e-004**	**3.8400e-003**	**0.0000**	**28.2995**	**28.2995**	**4.7000e-004**	**3.8900e-003**	**29.4727**

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3.5 Site Preparation and Grading - 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					0.6506	0.0000	0.6506	0.3271	0.0000	0.3271	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0669	0.5808	0.5580	1.4700e-003		0.0280	0.0280		0.0258	0.0258	0.0000	128.4700	128.4700	0.0412	0.0000	129.4999
Total	**0.0669**	**0.5808**	**0.5580**	**1.4700e-003**	**0.6506**	**0.0280**	**0.6786**	**0.3271**	**0.0258**	**0.3529**	**0.0000**	**128.4700**	**128.4700**	**0.0412**	**0.0000**	**129.4999**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6400e-003	0.1576	0.0477	7.2000e-004	0.0237	9.5000e-004	0.0246	6.8500e-003	9.1000e-004	7.7600e-003	0.0000	69.7360	69.7360	9.5000e-004	0.0104	72.8716
Worker	3.3700e-003	2.3100e-003	0.0286	9.0000e-005	0.0102	5.0000e-005	0.0102	2.7100e-003	5.0000e-005	2.7600e-003	0.0000	7.9265	7.9265	2.4000e-004	2.2000e-004	7.9987
Total	**7.0100e-003**	**0.1599**	**0.0763**	**8.1000e-004**	**0.0339**	**1.0000e-003**	**0.0349**	**9.5600e-003**	**9.6000e-004**	**0.0105**	**0.0000**	**77.6625**	**77.6625**	**1.1900e-003**	**0.0107**	**80.8703**

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					0.2781	0.0000	0.2781	0.1398	0.0000	0.1398	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0207	0.1232	0.7979	1.4700e-003		2.8800e-003	2.8800e-003		2.8800e-003	2.8800e-003	0.0000	128.4698	128.4698	0.0412	0.0000	129.4997
Total	**0.0207**	**0.1232**	**0.7979**	**1.4700e-003**	**0.2781**	**2.8800e-003**	**0.2810**	**0.1398**	**2.8800e-003**	**0.1427**	**0.0000**	**128.4698**	**128.4698**	**0.0412**	**0.0000**	**129.4997**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6400e-003	0.1576	0.0477	7.2000e-004	0.0222	9.5000e-004	0.0231	6.4800e-003	9.1000e-004	7.3900e-003	0.0000	69.7360	69.7360	9.5000e-004	0.0104	72.8716
Worker	3.3700e-003	2.3100e-003	0.0286	9.0000e-005	9.3900e-003	5.0000e-005	9.4400e-003	2.5100e-003	5.0000e-005	2.5600e-003	0.0000	7.9265	7.9265	2.4000e-004	2.2000e-004	7.9987
Total	**7.0100e-003**	**0.1599**	**0.0763**	**8.1000e-004**	**0.0316**	**1.0000e-003**	**0.0326**	**8.9900e-003**	**9.6000e-004**	**9.9500e-003**	**0.0000**	**77.6625**	**77.6625**	**1.1900e-003**	**0.0107**	**80.8703**

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3.6 Soil Hauling - 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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.9300e-003	0.2159	0.0444	8.1000e-004	0.0219	1.9900e-003	0.0239	6.0200e-003	1.9100e-003	7.9300e-003	0.0000	79.0362	79.0362	1.7100e-003	0.0125	82.7989
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.9300e-003**	**0.2159**	**0.0444**	**8.1000e-004**	**0.0219**	**1.9900e-003**	**0.0239**	**6.0200e-003**	**1.9100e-003**	**7.9300e-003**	**0.0000**	**79.0362**	**79.0362**	**1.7100e-003**	**0.0125**	**82.7989**

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.9300e-003	0.2159	0.0444	8.1000e-004	0.0204	1.9900e-003	0.0224	5.6600e-003	1.9100e-003	7.5700e-003	0.0000	79.0362	79.0362	1.7100e-003	0.0125	82.7989
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.9300e-003**	**0.2159**	**0.0444**	**8.1000e-004**	**0.0204**	**1.9900e-003**	**0.0224**	**5.6600e-003**	**1.9100e-003**	**7.5700e-003**	**0.0000**	**79.0362**	**79.0362**	**1.7100e-003**	**0.0125**	**82.7989**

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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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.6200e-003	0.4853	0.1101	2.2000e-003	0.0626	4.1400e-003	0.0667	0.0172	3.9600e-003	0.0212	0.0000	215.2213	215.2213	4.5600e-003	0.0340	225.4684
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.6200e-003**	**0.4853**	**0.1101**	**2.2000e-003**	**0.0626**	**4.1400e-003**	**0.0667**	**0.0172**	**3.9600e-003**	**0.0212**	**0.0000**	**215.2213**	**215.2213**	**4.5600e-003**	**0.0340**	**225.4684**

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.6200e-003	0.4853	0.1101	2.2000e-003	0.0584	4.1400e-003	0.0625	0.0162	3.9600e-003	0.0202	0.0000	215.2213	215.2213	4.5600e-003	0.0340	225.4684
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.6200e-003**	**0.4853**	**0.1101**	**2.2000e-003**	**0.0584**	**4.1400e-003**	**0.0625**	**0.0162**	**3.9600e-003**	**0.0202**	**0.0000**	**215.2213**	**215.2213**	**4.5600e-003**	**0.0340**	**225.4684**

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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	0.0399	0.4135	0.4750	7.6000e-004		0.0201	0.0201		0.0185	0.0185	0.0000	66.9359	66.9359	0.0217	0.0000	67.4771
Total	**0.0399**	**0.4135**	**0.4750**	**7.6000e-004**		**0.0201**	**0.0201**		**0.0185**	**0.0185**	**0.0000**	**66.9359**	**66.9359**	**0.0217**	**0.0000**	**67.4771**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.4000e-003	0.2338	0.0707	1.0700e-003	0.0351	1.4100e-003	0.0365	0.0102	1.3500e-003	0.0115	0.0000	103.4144	103.4144	1.4100e-003	0.0155	108.0642
Worker	0.0356	0.0244	0.3026	9.1000e-004	0.1076	5.6000e-004	0.1082	0.0286	5.1000e-004	0.0291	0.0000	83.7773	83.7773	2.5000e-003	2.3500e-003	84.5412
Total	**0.0410**	**0.2582**	**0.3733**	**1.9800e-003**	**0.1427**	**1.9700e-003**	**0.1447**	**0.0388**	**1.8600e-003**	**0.0407**	**0.0000**	**187.1917**	**187.1917**	**3.9100e-003**	**0.0178**	**192.6053**

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	0.0125	0.1447	0.5126	7.6000e-004		1.5300e-003	1.5300e-003		1.4900e-003	1.4900e-003	0.0000	66.9359	66.9359	0.0217	0.0000	67.4771
Total	**0.0125**	**0.1447**	**0.5126**	**7.6000e-004**		**1.5300e-003**	**1.5300e-003**		**1.4900e-003**	**1.4900e-003**	**0.0000**	**66.9359**	**66.9359**	**0.0217**	**0.0000**	**67.4771**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.4000e-003	0.2338	0.0707	1.0700e-003	0.0329	1.4100e-003	0.0343	9.6100e-003	1.3500e-003	0.0110	0.0000	103.4144	103.4144	1.4100e-003	0.0155	108.0642
Worker	0.0356	0.0244	0.3026	9.1000e-004	0.0992	5.6000e-004	0.0998	0.0266	5.1000e-004	0.0271	0.0000	83.7773	83.7773	2.5000e-003	2.3500e-003	84.5412
Total	**0.0410**	**0.2582**	**0.3733**	**1.9800e-003**	**0.1321**	**1.9700e-003**	**0.1341**	**0.0362**	**1.8600e-003**	**0.0380**	**0.0000**	**187.1917**	**187.1917**	**3.9100e-003**	**0.0178**	**192.6053**

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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	0.0607	0.6289	0.7660	1.2300e-003		0.0287	0.0287		0.0264	0.0264	0.0000	108.2975	108.2975	0.0350	0.0000	109.1732
Total	**0.0607**	**0.6289**	**0.7660**	**1.2300e-003**		**0.0287**	**0.0287**		**0.0264**	**0.0264**	**0.0000**	**108.2975**	**108.2975**	**0.0350**	**0.0000**	**109.1732**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.5300e-003	0.3795	0.1122	1.7000e-003	0.0568	2.3000e-003	0.0591	0.0164	2.2000e-003	0.0186	0.0000	164.6703	164.6703	2.2800e-003	0.0247	172.0795
Worker	0.0538	0.0352	0.4563	1.4300e-003	0.1740	8.6000e-004	0.1749	0.0463	7.9000e-004	0.0471	0.0000	131.1085	131.1085	3.6600e-003	3.5500e-003	132.2578
Total	**0.0623**	**0.4148**	**0.5685**	**3.1300e-003**	**0.2308**	**3.1600e-003**	**0.2340**	**0.0627**	**2.9900e-003**	**0.0657**	**0.0000**	**295.7787**	**295.7787**	**5.9400e-003**	**0.0282**	**304.3373**

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	0.0201	0.2337	0.8287	1.2300e-003		2.4300e-003	2.4300e-003		2.3700e-003	2.3700e-003	0.0000	108.2974	108.2974	0.0350	0.0000	109.1731
Total	**0.0201**	**0.2337**	**0.8287**	**1.2300e-003**		**2.4300e-003**	**2.4300e-003**		**2.3700e-003**	**2.3700e-003**	**0.0000**	**108.2974**	**108.2974**	**0.0350**	**0.0000**	**109.1731**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.5300e-003	0.3795	0.1122	1.7000e-003	0.0532	2.3000e-003	0.0555	0.0156	2.2000e-003	0.0178	0.0000	164.6703	164.6703	2.2800e-003	0.0247	172.0795
Worker	0.0538	0.0352	0.4563	1.4300e-003	0.1605	8.6000e-004	0.1613	0.0430	7.9000e-004	0.0438	0.0000	131.1085	131.1085	3.6600e-003	3.5500e-003	132.2578
Total	**0.0623**	**0.4148**	**0.5685**	**3.1300e-003**	**0.2137**	**3.1600e-003**	**0.2169**	**0.0585**	**2.9900e-003**	**0.0615**	**0.0000**	**295.7787**	**295.7787**	**5.9400e-003**	**0.0282**	**304.3373**

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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	0.0458	0.4772	0.6193	1.0000e-003		0.0200	0.0200		0.0184	0.0184	0.0000	88.0634	88.0634	0.0285	0.0000	88.7754
Total	**0.0458**	**0.4772**	**0.6193**	**1.0000e-003**		**0.0200**	**0.0200**		**0.0184**	**0.0184**	**0.0000**	**88.0634**	**88.0634**	**0.0285**	**0.0000**	**88.7754**

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	6.7800e-003	0.3083	0.0897	1.3600e-003	0.0462	1.8700e-003	0.0481	0.0134	1.7900e-003	0.0152	0.0000	131.4879	131.4879	1.8500e-003	0.0197	137.4073
Worker	0.0410	0.0258	0.3476	1.1200e-003	0.1415	6.7000e-004	0.1421	0.0376	6.1000e-004	0.0383	0.0000	103.0131	103.0131	2.7100e-003	2.7100e-003	103.8872
Total	**0.0478**	**0.3341**	**0.4373**	**2.4800e-003**	**0.1877**	**2.5400e-003**	**0.1902**	**0.0510**	**2.4000e-003**	**0.0534**	**0.0000**	**234.5010**	**234.5010**	**4.5600e-003**	**0.0224**	**241.2944**

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	0.0162	0.1897	0.6730	1.0000e-003		1.9500e-003	1.9500e-003		1.9100e-003	1.9100e-003	0.0000	88.0633	88.0633	0.0285	0.0000	88.7753
Total	**0.0162**	**0.1897**	**0.6730**	**1.0000e-003**		**1.9500e-003**	**1.9500e-003**		**1.9100e-003**	**1.9100e-003**	**0.0000**	**88.0633**	**88.0633**	**0.0285**	**0.0000**	**88.7753**

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	6.7800e-003	0.3083	0.0897	1.3600e-003	0.0433	1.8700e-003	0.0451	0.0126	1.7900e-003	0.0144	0.0000	131.4879	131.4879	1.8500e-003	0.0197	137.4073
Worker	0.0410	0.0258	0.3476	1.1200e-003	0.1305	6.7000e-004	0.1311	0.0349	6.1000e-004	0.0356	0.0000	103.0131	103.0131	2.7100e-003	2.7100e-003	103.8872
Total	**0.0478**	**0.3341**	**0.4373**	**2.4800e-003**	**0.1737**	**2.5400e-003**	**0.1763**	**0.0476**	**2.4000e-003**	**0.0500**	**0.0000**	**234.5010**	**234.5010**	**4.5600e-003**	**0.0224**	**241.2944**

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3.8 Architectural Coatings/Painting - 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	0.9099					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	**0.9099**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	6.1400e-003	4.0300e-003	0.0522	1.6000e-004	0.0199	1.0000e-004	0.0200	5.2900e-003	9.0000e-005	5.3800e-003	0.0000	14.9886	14.9886	4.2000e-004	4.1000e-004	15.1200
Total	**6.1400e-003**	**4.0300e-003**	**0.0522**	**1.6000e-004**	**0.0199**	**1.0000e-004**	**0.0200**	**5.2900e-003**	**9.0000e-005**	**5.3800e-003**	**0.0000**	**14.9886**	**14.9886**	**4.2000e-004**	**4.1000e-004**	**15.1200**

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	0.9099					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	**0.9099**	**0.0000**	**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 Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	6.1400e-003	4.0300e-003	0.0522	1.6000e-004	0.0184	1.0000e-004	0.0184	4.9100e-003	9.0000e-005	5.0000e-003	0.0000	14.9886	14.9886	4.2000e-004	4.1000e-004	15.1200
Total	**6.1400e-003**	**4.0300e-003**	**0.0522**	**1.6000e-004**	**0.0184**	**1.0000e-004**	**0.0184**	**4.9100e-003**	**9.0000e-005**	**5.0000e-003**	**0.0000**	**14.9886**	**14.9886**	**4.2000e-004**	**4.1000e-004**	**15.1200**

3.8 Architectural Coatings/Painting - 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	0.4304					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	**0.4304**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	2.7300e-003	1.7200e-003	0.0231	7.0000e-005	9.4100e-003	4.0000e-005	9.4500e-003	2.5000e-003	4.0000e-005	2.5400e-003	0.0000	6.8514	6.8514	1.8000e-004	1.8000e-004	6.9096
Total	**2.7300e-003**	**1.7200e-003**	**0.0231**	**7.0000e-005**	**9.4100e-003**	**4.0000e-005**	**9.4500e-003**	**2.5000e-003**	**4.0000e-005**	**2.5400e-003**	**0.0000**	**6.8514**	**6.8514**	**1.8000e-004**	**1.8000e-004**	**6.9096**

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	0.4304					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	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	**0.4304**	**0.0000**	**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 Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	2.7300e-003	1.7200e-003	0.0231	7.0000e-005	8.6800e-003	4.0000e-005	8.7200e-003	2.3200e-003	4.0000e-005	2.3600e-003	0.0000	6.8514	6.8514	1.8000e-004	1.8000e-004	6.9096
Total	**2.7300e-003**	**1.7200e-003**	**0.0231**	**7.0000e-005**	**8.6800e-003**	**4.0000e-005**	**8.7200e-003**	**2.3200e-003**	**4.0000e-005**	**2.3600e-003**	**0.0000**	**6.8514**	**6.8514**	**1.8000e-004**	**1.8000e-004**	**6.9096**

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3.9 Finishing/Landscaping - 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	0.0209	0.2156	0.3187	4.6000e-004		9.2200e-003	9.2200e-003		8.5200e-003	8.5200e-003	0.0000	40.1993	40.1993	0.0127	0.0000	40.5156
Paving	8.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0217**	**0.2156**	**0.3187**	**4.6000e-004**		**9.2200e-003**	**9.2200e-003**		**8.5200e-003**	**8.5200e-003**	**0.0000**	**40.1993**	**40.1993**	**0.0127**	**0.0000**	**40.5156**

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	1.5200e-003	9.6000e-004	0.0129	4.0000e-005	5.2400e-003	2.0000e-005	5.2700e-003	1.3900e-003	2.0000e-005	1.4200e-003	0.0000	3.8172	3.8172	1.0000e-004	1.0000e-004	3.8496
Total	**1.5200e-003**	**9.6000e-004**	**0.0129**	**4.0000e-005**	**5.2400e-003**	**2.0000e-005**	**5.2700e-003**	**1.3900e-003**	**2.0000e-005**	**1.4200e-003**	**0.0000**	**3.8172**	**3.8172**	**1.0000e-004**	**1.0000e-004**	**3.8496**

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	8.8200e-003	0.0939	0.3425	4.6000e-004		1.2200e-003	1.2200e-003		1.2200e-003	1.2200e-003	0.0000	40.1993	40.1993	0.0127	0.0000	40.5155
Paving	8.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.6200e-003**	**0.0939**	**0.3425**	**4.6000e-004**		**1.2200e-003**	**1.2200e-003**		**1.2200e-003**	**1.2200e-003**	**0.0000**	**40.1993**	**40.1993**	**0.0127**	**0.0000**	**40.5155**

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	1.5200e-003	9.6000e-004	0.0129	4.0000e-005	4.8300e-003	2.0000e-005	4.8600e-003	1.2900e-003	2.0000e-005	1.3200e-003	0.0000	3.8172	3.8172	1.0000e-004	1.0000e-004	3.8496
Total	**1.5200e-003**	**9.6000e-004**	**0.0129**	**4.0000e-005**	**4.8300e-003**	**2.0000e-005**	**4.8600e-003**	**1.2900e-003**	**2.0000e-005**	**1.3200e-003**	**0.0000**	**3.8172**	**3.8172**	**1.0000e-004**	**1.0000e-004**	**3.8496**

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3.10 Rough Grading/Final Grading - 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					
Fugitive Dust					0.3895	0.0000	0.3895	0.1884	0.0000	0.1884	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0705	0.7068	0.7396	1.3000e-003		0.0310	0.0310		0.0285	0.0285	0.0000	114.2587	114.2587	0.0370	0.0000	115.1825
Total	**0.0705**	**0.7068**	**0.7396**	**1.3000e-003**	**0.3895**	**0.0310**	**0.4205**	**0.1884**	**0.0285**	**0.2168**	**0.0000**	**114.2587**	**114.2587**	**0.0370**	**0.0000**	**115.1825**

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	2.2700e-003	1.4300e-003	0.0192	6.0000e-005	7.8300e-003	4.0000e-005	7.8600e-003	2.0800e-003	3.0000e-005	2.1200e-003	0.0000	5.6999	5.6999	1.5000e-004	1.5000e-004	5.7483
Total	**2.2700e-003**	**1.4300e-003**	**0.0192**	**6.0000e-005**	**7.8300e-003**	**4.0000e-005**	**7.8600e-003**	**2.0800e-003**	**3.0000e-005**	**2.1200e-003**	**0.0000**	**5.6999**	**5.6999**	**1.5000e-004**	**1.5000e-004**	**5.7483**

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					0.1665	0.0000	0.1665	0.0805	0.0000	0.0805	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0174	0.1313	0.8709	1.3000e-003		2.1200e-003	2.1200e-003		2.1200e-003	2.1200e-003	0.0000	114.2585	114.2585	0.0370	0.0000	115.1824
Total	**0.0174**	**0.1313**	**0.8709**	**1.3000e-003**	**0.1665**	**2.1200e-003**	**0.1687**	**0.0805**	**2.1200e-003**	**0.0826**	**0.0000**	**114.2585**	**114.2585**	**0.0370**	**0.0000**	**115.1824**

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	2.2700e-003	1.4300e-003	0.0192	6.0000e-005	7.2200e-003	4.0000e-005	7.2600e-003	1.9300e-003	3.0000e-005	1.9700e-003	0.0000	5.6999	5.6999	1.5000e-004	1.5000e-004	5.7483
Total	**2.2700e-003**	**1.4300e-003**	**0.0192**	**6.0000e-005**	**7.2200e-003**	**4.0000e-005**	**7.2600e-003**	**1.9300e-003**	**3.0000e-005**	**1.9700e-003**	**0.0000**	**5.6999**	**5.6999**	**1.5000e-004**	**1.5000e-004**	**5.7483**

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3.11 Paving - 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	1.7600e-003	0.0172	0.0279	4.0000e-005		7.9000e-004	7.9000e-004		7.3000e-004	7.3000e-004	0.0000	3.7105	3.7105	1.2000e-003	0.0000	3.7405
Paving	8.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.5600e-003**	**0.0172**	**0.0279**	**4.0000e-005**		**7.9000e-004**	**7.9000e-004**		**7.3000e-004**	**7.3000e-004**	**0.0000**	**3.7105**	**3.7105**	**1.2000e-003**	**0.0000**	**3.7405**

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	6.0000e-005	4.0000e-005	5.4000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1612	0.1612	0.0000	0.0000	0.1626
Total	**6.0000e-005**	**4.0000e-005**	**5.4000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**2.2000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.1612**	**0.1612**	**0.0000**	**0.0000**	**0.1626**

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	5.2000e-004	2.2400e-003	0.0251	4.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.7105	3.7105	1.2000e-003	0.0000	3.7405
Paving	8.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.3200e-003**	**2.2400e-003**	**0.0251**	**4.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**3.7105**	**3.7105**	**1.2000e-003**	**0.0000**	**3.7405**

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	6.0000e-005	4.0000e-005	5.4000e-004	0.0000	2.0000e-004	0.0000	2.1000e-004	5.0000e-005	0.0000	6.0000e-005	0.0000	0.1612	0.1612	0.0000	0.0000	0.1626
Total	**6.0000e-005**	**4.0000e-005**	**5.4000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.1000e-004**	**5.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.1612**	**0.1612**	**0.0000**	**0.0000**	**0.1626**

Average Daily Emission Rates: Mitigation Measure AIR-2.1 from LRDP

On-site Exhaust Emissions[1]	DPM					PM2.5					Construction Duration per Year		
Year	Annual PM10 Exhaust Emissions (tons/yr)	(lbs/yr)	Average Daily Emissions (lbs/day)	Average Emission Rate (lbs/hr)	Average Emission Rate (g/s)	Annual PM2.5 Exhaust Emissions (tons/yr)	(lbs/yr)	Average Daily Emissions (lbs/day)	Average Emission Rate (lbs/hr)	Average Emission Rate (g/s)	Planned Work Days day/yr	Total Work Days days/yr	Scalar[2]
2022	0.0060	12.00	0.08	1.05E-02	1.32E-03	0.0057	11.38	0.08	9.95E-03	1.25E-03	143	260	0.55
2023	0.0044	8.82	0.03	4.24E-03	5.34E-04	0.0044	8.74	0.03	4.20E-03	5.29E-04	260	260	1.00
2024	0.0024	4.86	0.02	2.32E-03	2.92E-04	0.0024	4.74	0.02	2.26E-03	2.85E-04	262	262	1.00
2025	0.0054	10.7	0.05	6.29E-03	7.93E-04	0.0053	10.6	0.05	6.24E-03	7.87E-04	213	261	0.82

Offsite Exhaust Emissions[1]	DPM						PM2.5					
Year	Annual PM10 Exhaust Emissions (tons/yr)	Hauling Emissions w/in 1,000 ft (tons/yr)	Annual PM10 Exhaust Emissions (lbs/yr)	Average Daily Emissions (lbs/day)	Average Emission Rate (lbs/hr)	Average Emission Rate (g/s)	Annual PM10 Exhaust Emissions (tons/yr)	Hauling Emissions w/in 1,000 ft (tons/yr)	Annual PM10 Exhaust Emissions (lbs/yr)	Average Daily Emissions (lbs/day)	Average Emission Rate (lbs/hr)	Average Emission Rate (g/s)
2022	0.0050	9.10E-05	1.82E-01	1.27E-03	1.59E-04	2.00E-05	0.0047	8.71E-05	1.74E-01	1.22E-03	1.52E-04	1.92E-05
2023	0.0093	1.71E-04	3.42E-01	1.31E-03	1.64E-04	2.07E-05	0.0089	1.63E-04	3.26E-01	1.25E-03	1.57E-04	1.97E-05
2024	0.0033	5.99E-05	1.20E-01	4.57E-04	5.72E-05	7.20E-06	0.0031	5.66E-05	1.13E-01	4.32E-04	5.40E-05	6.80E-06
2025	0.0026	4.85E-05	9.70E-02	4.55E-04	5.69E-05	7.17E-06	0.0025	4.58E-05	9.15E-02	4.30E-04	5.37E-05	6.77E-06

Note: Emissions evenly distributed over 81 modeled volume sources.

				Haul Lengths	Trips
Hauling Length (miles) [3]	23.5	Weighted Average (mi)	Demolition	35	3,025
Haul Length within 1,000 ft of Site (mile) [4]	0.43	mi	Soil	20	9,969
Hours per work day (7:00 AM to 4:00 PM, 1-hour of breaks) [5]	8	hours	Wt Avg	23.5	

[1] DPM emissions taken as PM_{10} exhaust emissions from CalEEMod average annual emissions.

[2] Construction duration scalars determined for each year of construction to adjust receptor exposures to the exposure durations for each modeled construction year (used in risk calculation in App C).

[3] Weighted Average haul length for demolition and soil haul.

[4] Emissions from CalEEMod offsite average annual emissions, which is based on total haul truck trip distances, are adjusted to evaluate local emissions from the 0.43-mile route within 1,000 of the project site.

[5] Work hours applied in By Hour/Day (HRDOW) variable emissions module in air dispersion model (see App B - Air Dispersion Model Output Files).

Annual Construction Emissions

Make Ready Work

		Exhaust PM10	Exhaust PM2.5
Onsite	**2022**		
Fugtive Dust			
Off-Road		0.00486	4.55E-03
Total		**0.00486**	**4.55E-03**
Offsite			
Hauling		0	0
Vendor		0	0.00E+00
Worker		0.00004	4.00E-05
Total		**0.00004**	**4.00E-05**

Demolition

		Exhaust PM10	Exhaust PM2.5
Onsite	**2022**		
Off-Road		0.00013	0.00013
Total		**0.00013**	**0.00013**
Offsite			
Hauling		0	0
Vendor		0.00001	0.00001
Worker		0	0
Total		**0.00001**	**0.00001**

Demolition Hauling

		Exhaust PM10	Exhaust PM2.5
Onsite	**2022**		
Off-Road		0	0
Total		**0**	**0**
Offsite			
Hauling		0.00105	0.00101
Vendor		0	0
Worker		0	0
Total		**0.00219**	**0.00209**
Onsite	**2023**		
Off-Road		0	0
Total		**0**	**0**
Offsite			
Hauling		0.00219	0.00209
Vendor		0	0
Worker		0	0
Total		**0.00219**	**0.00209**

Site Preparation and Grading

		Exhaust PM10	Exhaust PM2.5
Onsite	**2022**		
Fugtive Dust		0	0
Off-Road		0.00101	0.00101
Total		**0.00101**	**0.00101**
Offsite			
Hauling		0	0
Vendor		0.0007	0.00067
Worker		0.00002	0.00002
Total		**0.00072**	**0.00069**
Onsite	**2023**		
Off-Road		0.00288	0.00288
Total		**0.00288**	**0.00288**
Offsite			
Hauling		0	0
Vendor		0.00095	0.00091
Worker		0.00005	0.00005
Total		**0.001**	**0.00096**

Soil Hauling

		Exhaust PM10	Exhaust PM2.5
Onsite	**2022**		
Fugtive Dust		0	0
Off-Road		0	0
Total		**0**	**0**
Offsite			
Hauling		0.00199	0.00191
Vendor		0	0
Worker		0	0
Total		**0.00199**	**0.00191**
Onsite	**2023**		
Off-Road		0	0
Total		**0**	**0**
Offsite			
Hauling		0.00414	0.00396
Vendor		0	0
Worker		0	0
Total		**0.00414**	**0.00396**

Building Construction				
			Exhaust PM10	Exhaust PM2.5
Onsite		**2023**		
	Off-Road		0.00153	0.00149
	Total		**0.00153**	**0.00149**
Offsite				
	Hauling		0	0
	Vendor		0.00141	0.00135
	Worker		0.00056	0.00051
	Total		**0.00197**	**0.00186**
Onsite		**2024**		
	Off-Road		0.00243	0.00237
	Total		**0.00243**	**0.00237**
Offsite				
	Hauling		0	0
	Vendor		0.0023	0.0022
	Worker		0.00086	0.00079
	Total		**0.00316**	**0.00299**
Onsite		**2025**		
	Off-Road		0.00195	0.00191
	Total		**0.00195**	**0.00191**
Offsite				
	Hauling		0	0
	Vendor		0.00187	0.00179
	Worker		0.00067	0.00061
	Total		**0.00254**	**0.0024**

Architectural Coatings				
Onsite		**2024**	Exhaust PM10	Exhaust PM2.5
	Archit. Coating		0	0
	Off-Road		0	0
	Total		**0**	**0**
Offsite				
	Hauling		0	0
	Vendor		0	0
	Worker		0.0001	0.00009
	Total		**0.0001**	**0.00009**
Onsite		**2025**		
	Archit. Coating		0	0
	Off-Road		0	0
	Total		**0**	**0**
Offsite				
	Hauling		0	0
	Vendor		0	0
	Worker		0.00004	0.00004
	Total		**0.00004**	**0.00004**

Finishing/Landscaping

		Exhaust PM10	Exhaust PM2.5
Onsite	**2025**		
	Off-Road	0.00122	0.00122
	Total	**0.00122**	**0.00122**
Offsite			
	Hauling	0	0
	Vendor	0	0
	Worker	0.00002	0.00002
	Total	**0.00002**	**0.00002**

Rough Grading/Final Grading

		Exhaust PM10	Exhaust PM2.5
Onsite	**2025**		
	Fugitive Dust	0	0
	Off-Road	0.00212	0.00212
	Total	**0.00212**	**0.00212**
Offsite			
	Hauling	0	0
	Vendor	0	0
	Worker	0.00004	0.00003
	Total	**0.00004**	**0.00003**

Paving

		Exhaust PM10	Exhaust PM2.5
Onsite	**2025**		
	Off-Road	0.00007	0.00007
	Paving	0	0
	Total	**0.00007**	**0.00007**
Offsite			
	Hauling	0	0
	Vendor	0	0
	Worker	0	0
	Total	**0**	**0**

Appendix B. Air Dispersion Model Output

Control Pathway

Dispersion Options

Titles

UC Berkeley, The Gateway, Construction HRA
Addendum to LRDP

Dispersion Options

☑ Regulatory Default ☐ Non-Default Options

Dispersion Coefficient

Urban

Population:
Name (Optional):
Roughness Length:

Output Type

☑ Concentration
☐ Total Deposition (Dry & Wet)
☐ Dry Deposition
☐ Wet Deposition

Plume Depletion

☐ Dry Removal
☐ Wet Removal

Output Warnings

☐ No Output Warnings
☐ Non-fatal Warnings for Non-sequential Met Data

Pollutant / Averaging Time / Terrain Options

Pollutant Type

Averaging Time Options

Hours ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 6 ☐ 8 ☐ 12 ☐ 24

☐ Month ☑ Period ☐ Annual

Exponential Decay

Half-life of 4 hrs will be used

Terrain Height Options

☐ Flat ☑ Elevated

SO: Meters
RE: Meters
TG: Meters

Flagpole Receptors

☑ Yes ☐ No

Default Height = 1.50 m

Control Pathway

Optional Files

Re-Start File	Init File	Multi-Year Analyses	Event Input File	Error Listing File
☐	☐	☐	☐	■

Detailed Error Listing File

Filename: UCB_01.err

Source Pathway - Source Inputs

Polygon Area Sources

Source Type: AREA POLY

Source: PAREA1

Base Elevation (Optional)	Release Height [m]	Emission Rate [g/ (s-m^2)]	Initial Vertical Dim. [m]	Number of Vertices (or sides)	X Coordinate for Vertices [m]	Y Coordinate for Vertices [m]
75.24	4.15	0.00007	1.93	20	564677.67	4192117.80
		0.00007			564713.84	4192129.27
		0.00007			564743.39	4192144.71
		0.00007			564743.39	4192150.44
		0.00007			564812.65	4192161.91
		0.00007			564815.74	4192151.77
		0.00007			564822.79	4192135.00
		0.00007			564831.18	4192123.97
		0.00007			564840.88	4192112.95
		0.00007			564845.73	4192106.77
		0.00007			564851.91	4192103.24
		0.00007			564867.35	4192099.27
		0.00007			564871.32	4192093.54
		0.00007			564870.88	4192086.48
		0.00007			564869.99	4192081.19
		0.00007			564866.47	4192075.89
		0.00007			564840.88	4192081.19
		0.00007			564789.71	4192063.54
		0.00007			564742.95	4192054.72
		0.00007			564685.61	4192048.10

Source Pathway - Source Inputs

Line Volume Sources

Source Type: LINE VOLUME

Source: SLINE1 (hauling)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.53	1.00000		564818.55	4192169.06	87.85	4.15
			564734.05	4192155.11	80.10	4.15
			564723.39	4192152.24	79.34	4.15
			564696.73	4192140.75	76.82	4.15
			564671.71	4192128.86	74.96	4.15
			564526.91	4192106.71	67.29	4.15
			564545.78	4191916.79	63.35	4.15
			564344.38	4191883.57	58.96	4.15

Source Pathway - Source Inputs

Volume Sources Generated from Line Sources

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE1	L0000001	564814.34	4192168.36	87.84	4.15	0.01235	8.53		3.97	1.63
	L0000002	564805.92	4192166.97	86.94	4.15	0.01235	8.53		3.97	1.63
	L0000003	564797.50	4192165.58	86.09	4.15	0.01235	8.53		3.97	1.63
	L0000004	564789.08	4192164.19	85.27	4.15	0.01235	8.53		3.97	1.63
	L0000005	564780.66	4192162.80	84.43	4.15	0.01235	8.53		3.97	1.63
	L0000006	564772.24	4192161.41	83.55	4.15	0.01235	8.53		3.97	1.63
	L0000007	564763.82	4192160.02	82.70	4.15	0.01235	8.53		3.97	1.63
	L0000008	564755.40	4192158.63	81.88	4.15	0.01235	8.53		3.97	1.63
	L0000009	564746.98	4192157.24	81.13	4.15	0.01235	8.53		3.97	1.63
	L0000010	564738.56	4192155.85	80.42	4.15	0.01235	8.53		3.97	1.63
	L0000011	564730.22	4192154.08	79.71	4.15	0.01235	8.53		3.97	1.63
	L0000012	564722.05	4192151.66	79.03	4.15	0.01235	8.53		3.97	1.63
	L0000013	564714.21	4192148.28	78.36	4.15	0.01235	8.53		3.97	1.63
	L0000014	564706.37	4192144.91	77.67	4.15	0.01235	8.53		3.97	1.63
	L0000015	564698.53	4192141.53	77.00	4.15	0.01235	8.53		3.97	1.63
	L0000016	564690.80	4192137.93	76.38	4.15	0.01235	8.53		3.97	1.63
	L0000017	564683.09	4192134.27	75.72	4.15	0.01235	8.53		3.97	1.63
	L0000018	564675.38	4192130.60	75.20	4.15	0.01235	8.53		3.97	1.63
	L0000019	564667.29	4192128.18	74.69	4.15	0.01235	8.53		3.97	1.63
	L0000020	564658.86	4192126.89	74.15	4.15	0.01235	8.53		3.97	1.63
	L0000021	564650.42	4192125.60	73.62	4.15	0.01235	8.53		3.97	1.63
	L0000022	564641.98	4192124.31	73.13	4.15	0.01235	8.53		3.97	1.63
	L0000023	564633.55	4192123.02	72.63	4.15	0.01235	8.53		3.97	1.63
	L0000024	564625.11	4192121.73	72.16	4.15	0.01235	8.53		3.97	1.63

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE1	L0000025	564616.67	4192120.44	71.72	4.15	0.01235	8.53		3.97	1.63
	L0000026	564608.24	4192119.15	71.32	4.15	0.01235	8.53		3.97	1.63
	L0000027	564599.80	4192117.86	70.91	4.15	0.01235	8.53		3.97	1.63
	L0000028	564591.36	4192116.57	70.49	4.15	0.01235	8.53		3.97	1.63
	L0000029	564582.93	4192115.28	70.07	4.15	0.01235	8.53		3.97	1.63
	L0000030	564574.49	4192113.99	69.63	4.15	0.01235	8.53		3.97	1.63
	L0000031	564566.06	4192112.70	69.21	4.15	0.01235	8.53		3.97	1.63
	L0000032	564557.62	4192111.40	68.76	4.15	0.01235	8.53		3.97	1.63
	L0000033	564549.18	4192110.11	68.32	4.15	0.01235	8.53		3.97	1.63
	L0000034	564540.75	4192108.82	67.92	4.15	0.01235	8.53		3.97	1.63
	L0000035	564532.31	4192107.53	67.62	4.15	0.01235	8.53		3.97	1.63
	L0000036	564527.21	4192103.65	67.39	4.15	0.01235	8.53		3.97	1.63
	L0000037	564528.06	4192095.16	67.26	4.15	0.01235	8.53		3.97	1.63
	L0000038	564528.90	4192086.67	67.16	4.15	0.01235	8.53		3.97	1.63
	L0000039	564529.74	4192078.17	67.07	4.15	0.01235	8.53		3.97	1.63
	L0000040	564530.59	4192069.68	66.99	4.15	0.01235	8.53		3.97	1.63
	L0000041	564531.43	4192061.19	66.90	4.15	0.01235	8.53		3.97	1.63
	L0000042	564532.28	4192052.70	66.81	4.15	0.01235	8.53		3.97	1.63
	L0000043	564533.12	4192044.20	66.71	4.15	0.01235	8.53		3.97	1.63
	L0000044	564533.96	4192035.71	66.63	4.15	0.01235	8.53		3.97	1.63
	L0000045	564534.81	4192027.22	66.56	4.15	0.01235	8.53		3.97	1.63
	L0000046	564535.65	4192018.73	66.45	4.15	0.01235	8.53		3.97	1.63
	L0000047	564536.49	4192010.23	66.28	4.15	0.01235	8.53		3.97	1.63
	L0000048	564537.34	4192001.74	66.03	4.15	0.01235	8.53		3.97	1.63
	L0000049	564538.18	4191993.25	65.75	4.15	0.01235	8.53		3.97	1.63

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE1	L0000050	564539.03	4191984.76	65.44	4.15	0.01235	8.53		3.97	1.63
	L0000051	564539.87	4191976.26	65.14	4.15	0.01235	8.53		3.97	1.63
	L0000052	564540.71	4191967.77	64.83	4.15	0.01235	8.53		3.97	1.63
	L0000053	564541.56	4191959.28	64.52	4.15	0.01235	8.53		3.97	1.63
	L0000054	564542.40	4191950.79	64.20	4.15	0.01235	8.53		3.97	1.63
	L0000055	564543.24	4191942.29	63.89	4.15	0.01235	8.53		3.97	1.63
	L0000056	564544.09	4191933.80	63.63	4.15	0.01235	8.53		3.97	1.63
	L0000057	564544.93	4191925.31	63.45	4.15	0.01235	8.53		3.97	1.63
	L0000058	564545.78	4191916.81	63.36	4.15	0.01235	8.53		3.97	1.63
	L0000059	564537.38	4191915.41	63.10	4.15	0.01235	8.53		3.97	1.63
	L0000060	564528.96	4191914.02	62.76	4.15	0.01235	8.53		3.97	1.63
	L0000061	564520.54	4191912.63	62.38	4.15	0.01235	8.53		3.97	1.63
	L0000062	564512.12	4191911.24	61.99	4.15	0.01235	8.53		3.97	1.63
	L0000063	564503.70	4191909.85	61.65	4.15	0.01235	8.53		3.97	1.63
	L0000064	564495.28	4191908.46	61.39	4.15	0.01235	8.53		3.97	1.63
	L0000065	564486.86	4191907.07	61.17	4.15	0.01235	8.53		3.97	1.63
	L0000066	564478.44	4191905.68	60.99	4.15	0.01235	8.53		3.97	1.63
	L0000067	564470.02	4191904.29	60.83	4.15	0.01235	8.53		3.97	1.63
	L0000068	564461.60	4191902.90	60.68	4.15	0.01235	8.53		3.97	1.63
	L0000069	564453.18	4191901.51	60.53	4.15	0.01235	8.53		3.97	1.63
	L0000070	564444.75	4191900.13	60.38	4.15	0.01235	8.53		3.97	1.63
	L0000071	564436.33	4191898.74	60.25	4.15	0.01235	8.53		3.97	1.63
	L0000072	564427.91	4191897.35	60.13	4.15	0.01235	8.53		3.97	1.63
	L0000073	564419.49	4191895.96	60.02	4.15	0.01235	8.53		3.97	1.63
	L0000074	564411.07	4191894.57	59.90	4.15	0.01235	8.53		3.97	1.63

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE1	L0000075	564402.65	4191893.18	59.77	4.15	0.01235	8.53		3.97	1.63
	L0000076	564394.23	4191891.79	59.65	4.15	0.01235	8.53		3.97	1.63
	L0000077	564385.81	4191890.40	59.50	4.15	0.01235	8.53		3.97	1.63
	L0000078	564377.39	4191889.01	59.37	4.15	0.01235	8.53		3.97	1.63
	L0000079	564368.97	4191887.62	59.28	4.15	0.01235	8.53		3.97	1.63
	L0000080	564360.55	4191886.23	59.18	4.15	0.01235	8.53		3.97	1.63
	L0000081	564352.13	4191884.85	59.06	4.15	0.01235	8.53		3.97	1.63

Source Pathway

Building Downwash Information

Option not in use

Emission Rate Units for Output

For Concentration

Unit Factor:	1E6
Emission Unit Label:	GRAMS/SEC
Concentration Unit Label:	MICROGRAMS/M**3

Source Groups

Source Group ID:	List of Sources in Group (Source Range or Single Sources)
ONSITE	PAREA1
HAUL	SLINE1

Variable Emissions

Hour-of-Day / Day-of-Week Emission Rate Variation

Scenario: Work

Source ID:		**PAREA1**						
Weekdays								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	1.00	1.00	1.00	1.00	0.50
	Day	13 - 18	0.50	1.00	1.00	1.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Source ID:		**SLINE1**						
Weekdays								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	1.00	1.00	1.00	1.00	0.50
	Day	13 - 18	0.50	1.00	1.00	1.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Saturday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00
Sunday								
	Hour	1 - 6	0.00	0.00	0.00	0.00	0.00	0.00
	of	7 - 12	0.00	0.00	0.00	0.00	0.00	0.00
	Day	13 - 18	0.00	0.00	0.00	0.00	0.00	0.00
		19 - 24	0.00	0.00	0.00	0.00	0.00	0.00

Model Output
Unit Emission Rates (1 g/s)

```
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                    ***        01/19/22
*** AERMET - VERSION  14134 ***   *** Addendum to LRDP                                              ***        09:28:18
                                                                                                              PAGE   1
*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                        ***     MODEL SETUP OPTIONS SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

**Model Is Setup For Calculation of Average CONCentration Values.

  --  DEPOSITION LOGIC  --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
**Model Uses NO WET DEPLETION.  WETDPLT  =  F

**Model Uses URBAN Dispersion Algorithm for the SBL for    82 Source(s),
  for Total of    1 Urban Area(s):
  Urban Population =   1671000.0 ;  Urban Roughness Length =  1.000 m

**Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.
        6. Urban Roughness Length of 1.0 Meter Assumed.

**Other Options Specified:
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Accepts FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of:  OTHER

**Model Calculates PERIOD Averages Only

**This Run Includes:     82 Source(s);       2 Source Group(s); and    2949 Receptor(s)

               with:      0 POINT(s), including
                          0 POINTCAP(s) and      0 POINTHOR(s)
                and:     81 VOLUME source(s)
                and:      1 AREA type source(s)
                and:      0 LINE source(s)
                and:      0 RLINE/RLINEXT source(s)
                and:      0 OPENPIT source(s)
                and:      0 BUOYANT LINE source(s) with a total of     0 line(s)


**Model Set To Continue RUNning After the Setup Testing.
```

Model Output
Unit Emission Rates (1 g/s)

```
**The AERMET Input Meteorological Data Version Date:  14134

**Output Options Selected:
         Model Outputs Tables of PERIOD Averages by Receptor
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     1.80 ;  Decay Coef. =    0.000     ;  Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =      4.0 MB of RAM.

**Input Runstream File:          aermod.inp
**Output Print File:             aermod.out

**Detailed Error/Message File:   UCB_01.err
**File for Summary of Results:   UCB_01.sum
```

Model Output
Unit Emission Rates (1 g/s)

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(564568.3,	4192138.4,	69.9,	163.8,	1.5);	(564578.3,	4192138.4,	70.4,	163.8,	1.5);
(564588.3,	4192138.4,	70.8,	163.8,	1.5);	(564568.3,	4192148.4,	70.2,	163.8,	1.5);
(564578.3,	4192148.4,	70.6,	163.8,	1.5);	(564588.3,	4192148.4,	71.0,	163.8,	1.5);
(564608.3,	4192148.4,	72.1,	163.8,	1.5);	(564618.3,	4192148.4,	72.6,	163.8,	1.5);
(564628.3,	4192148.4,	73.2,	163.8,	1.5);	(564638.3,	4192148.4,	73.5,	163.8,	1.5);
(564648.3,	4192148.4,	73.6,	163.8,	1.5);	(564568.3,	4192158.4,	70.5,	163.8,	1.5);
(564578.3,	4192158.4,	70.9,	163.8,	1.5);	(564588.3,	4192158.4,	71.5,	163.8,	1.5);
(564608.3,	4192158.4,	72.6,	163.8,	1.5);	(564618.3,	4192158.4,	73.1,	163.8,	1.5);
(564628.3,	4192158.4,	73.7,	163.8,	1.5);	(564638.3,	4192158.4,	74.0,	163.8,	1.5);
(564648.3,	4192158.4,	74.2,	163.8,	1.5);	(564658.3,	4192158.4,	75.4,	163.8,	1.5);
(564668.3,	4192158.4,	76.3,	163.8,	1.5);	(564678.3,	4192158.4,	77.1,	163.8,	1.5);
(564688.3,	4192158.4,	77.5,	163.8,	1.5);	(564698.3,	4192158.4,	77.8,	163.8,	1.5);
(564568.3,	4192168.4,	71.1,	163.8,	1.5);	(564578.3,	4192168.4,	71.5,	163.8,	1.5);
(564588.3,	4192168.4,	72.1,	163.8,	1.5);	(564608.3,	4192168.4,	73.0,	163.8,	1.5);
(564618.3,	4192168.4,	73.6,	163.8,	1.5);	(564628.3,	4192168.4,	74.3,	163.8,	1.5);
(564638.3,	4192168.4,	74.8,	163.8,	1.5);	(564648.3,	4192168.4,	75.2,	163.8,	1.5);
(564658.3,	4192168.4,	76.1,	163.8,	1.5);	(564668.3,	4192168.4,	76.8,	163.8,	1.5);
(564678.3,	4192168.4,	77.5,	163.8,	1.5);	(564688.3,	4192168.4,	78.0,	163.8,	1.5);
(564698.3,	4192168.4,	78.4,	163.8,	1.5);	(564708.3,	4192168.4,	79.0,	163.8,	1.5);
(564718.3,	4192168.4,	79.6,	163.8,	1.5);	(564538.3,	4192178.4,	70.3,	163.8,	1.5);
(564548.3,	4192178.4,	70.6,	163.8,	1.5);	(564558.3,	4192178.4,	71.2,	163.8,	1.5);
(564568.3,	4192178.4,	72.1,	163.8,	1.5);	(564578.3,	4192178.4,	72.4,	163.8,	1.5);
(564588.3,	4192178.4,	72.7,	163.8,	1.5);	(564608.3,	4192178.4,	73.5,	163.8,	1.5);
(564618.3,	4192178.4,	74.1,	163.8,	1.5);	(564628.3,	4192178.4,	74.8,	163.8,	1.5);
(564638.3,	4192178.4,	75.5,	163.8,	1.5);	(564648.3,	4192178.4,	76.2,	163.8,	1.5);
(564658.3,	4192178.4,	76.9,	163.8,	1.5);	(564668.3,	4192178.4,	77.5,	163.8,	1.5);
(564678.3,	4192178.4,	77.9,	163.8,	1.5);	(564688.3,	4192178.4,	78.6,	163.8,	1.5);
(564698.3,	4192178.4,	79.2,	163.8,	1.5);	(564708.3,	4192178.4,	79.8,	163.8,	1.5);
(564718.3,	4192178.4,	80.3,	163.8,	1.5);	(564758.3,	4192178.4,	83.0,	163.8,	1.5);
(564768.3,	4192178.4,	83.9,	163.8,	1.5);	(564778.3,	4192178.4,	85.0,	163.8,	1.5);
(564788.3,	4192178.4,	85.9,	163.8,	1.5);	(564538.3,	4192188.4,	70.8,	163.8,	1.5);
(564548.3,	4192188.4,	71.0,	163.8,	1.5);	(564558.3,	4192188.4,	72.0,	163.8,	1.5);
(564568.3,	4192188.4,	72.9,	163.8,	1.5);	(564578.3,	4192188.4,	73.2,	163.8,	1.5);
(564588.3,	4192188.4,	73.5,	163.8,	1.5);	(564608.3,	4192188.4,	74.1,	163.8,	1.5);
(564618.3,	4192188.4,	74.6,	163.8,	1.5);	(564628.3,	4192188.4,	75.4,	163.8,	1.5);
(564638.3,	4192188.4,	76.2,	163.8,	1.5);	(564648.3,	4192188.4,	77.0,	163.8,	1.5);
(564658.3,	4192188.4,	77.8,	163.8,	1.5);	(564668.3,	4192188.4,	78.2,	163.8,	1.5);
(564678.3,	4192188.4,	78.6,	163.8,	1.5);	(564688.3,	4192188.4,	79.4,	163.8,	1.5);
(564698.3,	4192188.4,	80.1,	163.8,	1.5);	(564708.3,	4192188.4,	80.7,	163.8,	1.5);
(564718.3,	4192188.4,	81.2,	163.8,	1.5);	(564768.3,	4192188.4,	84.7,	163.8,	1.5);
(564778.3,	4192188.4,	85.8,	163.8,	1.5);	(564528.3,	4192198.4,	71.1,	114.5,	1.5);
(564538.3,	4192198.4,	71.5,	163.8,	1.5);	(564548.3,	4192198.4,	71.8,	163.8,	1.5);

Model Output
Unit Emission Rates (1 g/s)

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(564628.3, 4192198.4,	76.2,	163.8,	1.5);	(564638.3, 4192198.4,	77.2,	163.8,	1.5);
(564648.3, 4192198.4,	78.0,	163.8,	1.5);	(564658.3, 4192198.4,	78.7,	163.8,	1.5);
(564668.3, 4192198.4,	79.1,	163.8,	1.5);	(564678.3, 4192198.4,	79.6,	163.8,	1.5);
(564688.3, 4192198.4,	80.5,	163.8,	1.5);	(564698.3, 4192198.4,	81.3,	163.8,	1.5);
(564708.3, 4192198.4,	81.9,	163.8,	1.5);	(564718.3, 4192198.4,	82.4,	163.8,	1.5);
(564768.3, 4192198.4,	85.5,	163.8,	1.5);	(564778.3, 4192198.4,	86.6,	163.8,	1.5);
(564528.3, 4192208.4,	71.9,	114.5,	1.5);	(564538.3, 4192208.4,	72.5,	114.5,	1.5);
(564548.3, 4192208.4,	73.0,	114.5,	1.5);	(564558.3, 4192208.4,	73.7,	163.8,	1.5);
(564568.3, 4192208.4,	74.3,	163.8,	1.5);	(564578.3, 4192208.4,	74.8,	163.8,	1.5);
(564588.3, 4192208.4,	75.1,	163.8,	1.5);	(564608.3, 4192208.4,	75.8,	163.8,	1.5);
(564618.3, 4192208.4,	76.5,	163.8,	1.5);	(564628.3, 4192208.4,	77.3,	163.8,	1.5);
(564638.3, 4192208.4,	78.2,	163.8,	1.5);	(564648.3, 4192208.4,	79.0,	163.8,	1.5);
(564658.3, 4192208.4,	79.7,	163.8,	1.5);	(564668.3, 4192208.4,	80.1,	163.8,	1.5);
(564678.3, 4192208.4,	80.8,	163.8,	1.5);	(564688.3, 4192208.4,	81.5,	163.8,	1.5);
(564698.3, 4192208.4,	82.5,	163.8,	1.5);	(564708.3, 4192208.4,	83.3,	163.8,	1.5);
(564718.3, 4192208.4,	83.5,	163.8,	1.5);	(564528.3, 4192218.4,	72.7,	114.5,	1.5);
(564538.3, 4192218.4,	73.4,	114.5,	1.5);	(564548.3, 4192218.4,	74.0,	114.5,	1.5);
(564558.3, 4192218.4,	74.5,	114.5,	1.5);	(564568.3, 4192218.4,	74.9,	163.8,	1.5);
(564578.3, 4192218.4,	75.4,	163.8,	1.5);	(564588.3, 4192218.4,	75.9,	163.8,	1.5);
(564608.3, 4192218.4,	76.9,	163.8,	1.5);	(564618.3, 4192218.4,	77.7,	163.8,	1.5);
(564628.3, 4192218.4,	78.6,	163.8,	1.5);	(564638.3, 4192218.4,	79.3,	163.8,	1.5);
(564648.3, 4192218.4,	80.0,	163.8,	1.5);	(564658.3, 4192218.4,	80.6,	163.8,	1.5);
(564668.3, 4192218.4,	81.1,	163.8,	1.5);	(564678.3, 4192218.4,	82.0,	163.8,	1.5);
(564688.3, 4192218.4,	82.5,	163.8,	1.5);	(564698.3, 4192218.4,	83.5,	163.8,	1.5);
(564708.3, 4192218.4,	84.4,	163.8,	1.5);	(564718.3, 4192218.4,	84.7,	163.8,	1.5);
(564738.3, 4192218.4,	85.5,	163.8,	1.5);	(564748.3, 4192218.4,	86.4,	163.8,	1.5);
(564528.3, 4192228.4,	73.4,	114.3,	1.5);	(564538.3, 4192228.4,	74.2,	114.3,	1.5);
(564548.3, 4192228.4,	74.8,	114.5,	1.5);	(564558.3, 4192228.4,	75.4,	114.5,	1.5);
(564568.3, 4192228.4,	75.7,	163.8,	1.5);	(564578.3, 4192228.4,	76.1,	163.8,	1.5);
(564588.3, 4192228.4,	76.7,	163.8,	1.5);	(564608.3, 4192228.4,	78.0,	163.8,	1.5);
(564618.3, 4192228.4,	79.1,	163.8,	1.5);	(564628.3, 4192228.4,	80.0,	163.8,	1.5);
(564638.3, 4192228.4,	80.5,	163.8,	1.5);	(564648.3, 4192228.4,	81.0,	163.8,	1.5);
(564658.3, 4192228.4,	81.7,	163.8,	1.5);	(564668.3, 4192228.4,	82.3,	163.8,	1.5);
(564678.3, 4192228.4,	83.1,	163.8,	1.5);	(564688.3, 4192228.4,	83.8,	163.8,	1.5);
(564698.3, 4192228.4,	84.7,	163.8,	1.5);	(564708.3, 4192228.4,	85.5,	163.8,	1.5);
(564738.3, 4192228.4,	86.5,	163.8,	1.5);	(564748.3, 4192228.4,	87.2,	163.8,	1.5);
(564758.3, 4192228.4,	87.5,	163.8,	1.5);	(564528.3, 4192238.4,	74.0,	114.2,	1.5);
(564538.3, 4192238.4,	74.8,	114.3,	1.5);	(564548.3, 4192238.4,	75.5,	114.3,	1.5);
(564558.3, 4192238.4,	76.2,	114.5,	1.5);	(564568.3, 4192238.4,	76.5,	114.5,	1.5);

```
    ( 564578.3, 4192238.4,      77.1,     163.8,       1.5);         ( 564588.3, 4192238.4,      77.8,     163.8,       1.5);
    ( 564608.3, 4192238.4,      79.2,     163.8,       1.5);         ( 564618.3, 4192238.4,      80.3,     163.8,       1.5);
    ( 564628.3, 4192238.4,      81.0,     163.8,       1.5);         ( 564638.3, 4192238.4,      81.5,     163.8,       1.5);
    ( 564648.3, 4192238.4,      82.1,     163.8,       1.5);         ( 564658.3, 4192238.4,      82.8,     163.8,       1.5);
    ( 564668.3, 4192238.4,      83.3,     163.8,       1.5);         ( 564678.3, 4192238.4,      84.3,     163.8,       1.5);
    ( 564688.3, 4192238.4,      85.2,     163.8,       1.5);         ( 564698.3, 4192238.4,      86.1,     163.8,       1.5);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                          ***        01/19/22
*** AERMET - VERSION  14134 ***   *** Addendum to LRDP                                                    ***        09:28:18
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*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                        *** DISCRETE CARTESIAN RECEPTORS ***
                                    (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

    ( 564708.3, 4192238.4,      86.9,     163.8,       1.5);         ( 564738.3, 4192238.4,      87.9,     163.8,       1.5);
    ( 564748.3, 4192238.4,      88.2,     163.8,       1.5);         ( 564528.3, 4192248.4,      74.7,     114.2,       1.5);
    ( 564538.3, 4192248.4,      75.4,     114.2,       1.5);         ( 564548.3, 4192248.4,      76.2,     114.2,       1.5);
    ( 564558.3, 4192248.4,      76.9,     114.3,       1.5);         ( 564568.3, 4192248.4,      77.4,     114.5,       1.5);
    ( 564578.3, 4192248.4,      78.1,     114.5,       1.5);         ( 564588.3, 4192248.4,      78.8,     114.5,       1.5);
    ( 564608.3, 4192248.4,      80.3,     114.5,       1.5);         ( 564618.3, 4192248.4,      81.2,     114.5,       1.5);
    ( 564628.3, 4192248.4,      82.0,     114.5,       1.5);         ( 564638.3, 4192248.4,      82.6,     163.8,       1.5);
    ( 564648.3, 4192248.4,      83.3,     163.8,       1.5);         ( 564658.3, 4192248.4,      83.8,     163.8,       1.5);
    ( 564668.3, 4192248.4,      84.4,     163.8,       1.5);         ( 564678.3, 4192248.4,      85.6,     163.8,       1.5);
    ( 564688.3, 4192248.4,      86.4,     163.8,       1.5);         ( 564698.3, 4192248.4,      87.3,     163.8,       1.5);
    ( 564708.3, 4192248.4,      88.2,     163.8,       1.5);         ( 564738.3, 4192248.4,      89.3,     163.8,       1.5);
    ( 564748.3, 4192248.4,      89.4,     163.8,       1.5);         ( 564528.3, 4192258.4,      75.3,     114.0,       1.5);
    ( 564538.3, 4192258.4,      75.9,     114.2,       1.5);         ( 564548.3, 4192258.4,      77.1,     114.0,       1.5);
    ( 564558.3, 4192258.4,      78.0,     114.2,       1.5);         ( 564568.3, 4192258.4,      78.4,     114.2,       1.5);
    ( 564578.3, 4192258.4,      79.1,     114.3,       1.5);         ( 564588.3, 4192258.4,      79.7,     114.3,       1.5);
    ( 564608.3, 4192258.4,      81.3,     114.5,       1.5);         ( 564618.3, 4192258.4,      82.2,     114.5,       1.5);
    ( 564628.3, 4192258.4,      82.8,     114.5,       1.5);         ( 564638.3, 4192258.4,      83.6,     114.5,       1.5);
    ( 564648.3, 4192258.4,      84.5,     114.5,       1.5);         ( 564658.3, 4192258.4,      85.2,     114.5,       1.5);
    ( 564668.3, 4192258.4,      85.9,     114.5,       1.5);         ( 564678.3, 4192258.4,      87.0,     114.5,       1.5);
    ( 564688.3, 4192258.4,      87.9,     114.5,       1.5);         ( 564698.3, 4192258.4,      88.9,     114.5,       1.5);
    ( 564708.3, 4192258.4,      89.7,     114.5,       1.5);         ( 564738.3, 4192258.4,      90.8,     163.8,       1.5);
    ( 564528.3, 4192268.4,      76.1,     111.0,       1.5);         ( 564538.3, 4192268.4,      76.5,     114.0,       1.5);
    ( 564548.3, 4192268.4,      77.9,     113.5,       1.5);         ( 564558.3, 4192268.4,      78.9,     113.5,       1.5);
    ( 564568.3, 4192268.4,      79.3,     114.0,       1.5);         ( 564578.3, 4192268.4,      80.0,     114.2,       1.5);
    ( 564588.3, 4192268.4,      80.7,     114.2,       1.5);         ( 564608.3, 4192268.4,      82.4,     114.3,       1.5);
    ( 564618.3, 4192268.4,      83.3,     114.3,       1.5);         ( 564628.3, 4192268.4,      84.1,     114.3,       1.5);
    ( 564638.3, 4192268.4,      84.9,     114.3,       1.5);         ( 564648.3, 4192268.4,      85.9,     114.3,       1.5);
    ( 564658.3, 4192268.4,      86.8,     114.3,       1.5);         ( 564668.3, 4192268.4,      87.7,     114.3,       1.5);
    ( 564678.3, 4192268.4,      88.4,     114.5,       1.5);         ( 564688.3, 4192268.4,      89.3,     114.5,       1.5);
    ( 564698.3, 4192268.4,      90.3,     114.5,       1.5);         ( 564708.3, 4192268.4,      91.2,     114.5,       1.5);
    ( 564728.3, 4192268.4,      92.1,     114.5,       1.5);         ( 564528.3, 4192278.4,      76.7,     111.0,       1.5);
    ( 564538.3, 4192278.4,      77.4,     111.0,       1.5);         ( 564548.3, 4192278.4,      78.5,     111.0,       1.5);
    ( 564558.3, 4192278.4,      79.5,     111.0,       1.5);         ( 564568.3, 4192278.4,      80.1,     111.0,       1.5);
    ( 564578.3, 4192278.4,      80.9,     113.5,       1.5);         ( 564588.3, 4192278.4,      81.6,     114.0,       1.5);
    ( 564608.3, 4192278.4,      83.4,     114.0,       1.5);         ( 564618.3, 4192278.4,      84.4,     114.0,       1.5);
    ( 564628.3, 4192278.4,      85.3,     114.0,       1.5);         ( 564638.3, 4192278.4,      86.2,     114.2,       1.5);
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Model Output
Unit Emission Rates (1 g/s)

```
    ( 564648.3, 4192278.4,      87.2,     114.0,       1.5);         ( 564658.3, 4192278.4,      88.2,     114.0,       1.5);
    ( 564668.3, 4192278.4,      89.1,     114.2,       1.5);         ( 564678.3, 4192278.4,      89.8,     114.2,       1.5);
    ( 564688.3, 4192278.4,      90.8,     114.2,       1.5);         ( 564698.3, 4192278.4,      91.8,     114.2,       1.5);
    ( 564708.3, 4192278.4,      92.6,     114.2,       1.5);         ( 564728.3, 4192278.4,      93.7,     114.5,       1.5);
    ( 564518.3, 4192288.4,      76.4,     111.0,       1.5);         ( 564528.3, 4192288.4,      77.4,     111.0,       1.5);
    ( 564538.3, 4192288.4,      78.1,     111.0,       1.5);         ( 564548.3, 4192288.4,      79.2,     111.0,       1.5);
    ( 564558.3, 4192288.4,      80.4,     111.0,       1.5);         ( 564568.3, 4192288.4,      81.1,     111.0,       1.5);
    ( 564578.3, 4192288.4,      81.8,     111.0,       1.5);         ( 564588.3, 4192288.4,      82.5,     111.0,       1.5);
    ( 564608.3, 4192288.4,      84.3,     111.0,       1.5);         ( 564618.3, 4192288.4,      85.4,     111.0,       1.5);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                          ***        01/19/22
*** AERMET - VERSION  14134 ***   *** Addendum to LRDP                                                    ***        09:28:18
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*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                        *** DISCRETE CARTESIAN RECEPTORS ***
                                    (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

    ( 564628.3, 4192288.4,      86.3,     111.0,       1.5);         ( 564638.3, 4192288.4,      87.3,     111.0,       1.5);
    ( 564648.3, 4192288.4,      88.3,     111.0,       1.5);         ( 564658.3, 4192288.4,      89.4,     111.0,       1.5);
    ( 564668.3, 4192288.4,      90.3,     111.0,       1.5);         ( 564678.3, 4192288.4,      91.3,     111.0,       1.5);
    ( 564688.3, 4192288.4,      92.3,     111.0,       1.5);         ( 564698.3, 4192288.4,      93.2,     111.0,       1.5);
    ( 564708.3, 4192288.4,      94.0,     111.0,       1.5);         ( 564518.3, 4192298.4,      77.2,     111.0,       1.5);
    ( 564528.3, 4192298.4,      78.2,     111.0,       1.5);         ( 564538.3, 4192298.4,      78.9,     111.0,       1.5);
    ( 564548.3, 4192298.4,      79.9,     111.0,       1.5);         ( 564558.3, 4192298.4,      81.3,     111.0,       1.5);
    ( 564568.3, 4192298.4,      82.1,     111.0,       1.5);         ( 564578.3, 4192298.4,      82.8,     111.0,       1.5);
    ( 564588.3, 4192298.4,      83.4,     111.0,       1.5);         ( 564608.3, 4192298.4,      85.0,     111.0,       1.5);
    ( 564618.3, 4192298.4,      86.3,     111.0,       1.5);         ( 564628.3, 4192298.4,      87.3,     111.0,       1.5);
    ( 564638.3, 4192298.4,      88.4,     111.0,       1.5);         ( 564648.3, 4192298.4,      89.5,     111.0,       1.5);
    ( 564658.3, 4192298.4,      90.6,     111.0,       1.5);         ( 564668.3, 4192298.4,      91.8,     111.0,       1.5);
    ( 564678.3, 4192298.4,      93.0,     111.0,       1.5);         ( 564688.3, 4192298.4,      93.9,     111.0,       1.5);
    ( 564698.3, 4192298.4,      94.9,     111.0,       1.5);         ( 564708.3, 4192298.4,      95.6,     111.0,       1.5);
    ( 564518.3, 4192308.4,      78.0,     111.0,       1.5);         ( 564528.3, 4192308.4,      79.0,     111.0,       1.5);
    ( 564538.3, 4192308.4,      79.7,     111.0,       1.5);         ( 564548.3, 4192308.4,      80.7,     111.0,       1.5);
    ( 564558.3, 4192308.4,      82.2,     111.0,       1.5);         ( 564568.3, 4192308.4,      83.2,     111.0,       1.5);
    ( 564578.3, 4192308.4,      83.7,     111.0,       1.5);         ( 564588.3, 4192308.4,      84.2,     111.0,       1.5);
    ( 564608.3, 4192308.4,      85.8,     111.0,       1.5);         ( 564618.3, 4192308.4,      87.4,     111.0,       1.5);
    ( 564628.3, 4192308.4,      88.6,     111.0,       1.5);         ( 564638.3, 4192308.4,      89.5,     111.0,       1.5);
    ( 564648.3, 4192308.4,      90.5,     111.0,       1.5);         ( 564658.3, 4192308.4,      91.8,     111.0,       1.5);
    ( 564668.3, 4192308.4,      93.2,     111.0,       1.5);         ( 564678.3, 4192308.4,      94.5,     111.0,       1.5);
    ( 564688.3, 4192308.4,      95.5,     111.0,       1.5);         ( 564698.3, 4192308.4,      96.7,     111.0,       1.5);
    ( 564708.3, 4192308.4,      97.1,     111.0,       1.5);         ( 564518.3, 4192318.4,      78.7,     111.0,       1.5);
    ( 564528.3, 4192318.4,      79.8,     111.0,       1.5);         ( 564538.3, 4192318.4,      80.7,     111.0,       1.5);
    ( 564548.3, 4192318.4,      81.7,     111.0,       1.5);         ( 564558.3, 4192318.4,      83.3,     111.0,       1.5);
    ( 564568.3, 4192318.4,      84.1,     111.0,       1.5);         ( 564578.3, 4192318.4,      84.4,     111.0,       1.5);
    ( 564588.3, 4192318.4,      85.0,     111.0,       1.5);         ( 564608.3, 4192318.4,      86.6,     111.0,       1.5);
    ( 564618.3, 4192318.4,      88.5,     111.0,       1.5);         ( 564628.3, 4192318.4,      89.8,     111.0,       1.5);
    ( 564363.7, 4191910.2,      59.4,      59.4,       6.1);         ( 564373.7, 4191910.2,      59.5,      59.5,       6.1);
    ( 564383.7, 4191910.2,      59.6,      59.6,       6.1);         ( 564393.7, 4191910.2,      59.8,      59.8,       6.1);
    ( 564403.7, 4191910.2,      59.9,      59.9,       6.1);         ( 564413.7, 4191910.2,      60.1,      60.1,       6.1);
    ( 564363.7, 4191920.2,      59.6,      59.6,       6.1);         ( 564373.7, 4191920.2,      59.6,      59.6,       6.1);
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Model Output
Unit Emission Rates (1 g/s)

```
    ( 564383.7, 4191920.2,      59.7,      59.7,       6.1);         ( 564393.7, 4191920.2,      59.8,      59.8,       6.1);
    ( 564403.7, 4191920.2,      60.0,      60.0,       6.1);         ( 564413.7, 4191920.2,      60.2,      60.2,       6.1);
    ( 564423.7, 4191920.2,      60.3,      60.3,       6.1);         ( 564433.7, 4191920.2,      60.5,      60.5,       6.1);
    ( 564443.7, 4191920.2,      60.6,      60.6,       6.1);         ( 564453.7, 4191920.2,      60.8,      60.8,       6.1);
    ( 564463.7, 4191920.2,      61.0,      61.0,       6.1);         ( 564353.7, 4191930.2,      59.8,      59.8,       6.1);
    ( 564363.7, 4191930.2,      59.8,      59.8,       6.1);         ( 564373.7, 4191930.2,      59.8,      59.8,       6.1);
    ( 564383.7, 4191930.2,      59.8,      59.8,       6.1);         ( 564393.7, 4191930.2,      59.8,      59.8,       6.1);
    ( 564403.7, 4191930.2,      60.1,      60.1,       6.1);         ( 564413.7, 4191930.2,      60.3,      60.3,       6.1);
    ( 564423.7, 4191930.2,      60.4,      60.4,       6.1);         ( 564433.7, 4191930.2,      60.6,      60.6,       6.1);
    ( 564443.7, 4191930.2,      60.7,      60.7,       6.1);         ( 564453.7, 4191930.2,      61.0,      61.0,       6.1);
    ( 564463.7, 4191930.2,      61.3,      61.3,       6.1);         ( 564373.7, 4191940.2,      60.1,      60.1,       6.1);
    ( 564383.7, 4191940.2,      60.1,      60.1,       6.1);         ( 564393.7, 4191940.2,      60.0,      60.0,       6.1);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                          ***       01/19/22
*** AERMET - VERSION  14134 ***   *** Addendum to LRDP                                                    ***       09:28:18
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*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                  *** DISCRETE CARTESIAN RECEPTORS ***
                                (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                          (METERS)

    ( 564403.7, 4191940.2,      60.3,      60.3,       6.1);         ( 564413.7, 4191940.2,      60.5,      60.5,       6.1);
    ( 564423.7, 4191940.2,      60.6,      60.6,       6.1);         ( 564433.7, 4191940.2,      60.7,      60.7,       6.1);
    ( 564443.7, 4191940.2,      60.9,      60.9,       6.1);         ( 564453.7, 4191940.2,      61.3,      61.3,       6.1);
    ( 564433.7, 4191950.2,      61.3,      61.3,       6.1);         ( 564443.7, 4191950.2,      61.5,      61.5,       6.1);
    ( 564453.7, 4191950.2,      61.8,      61.8,       6.1);         ( 564433.7, 4191960.2,      62.1,      62.1,       6.1);
    ( 564443.7, 4191960.2,      62.3,      62.3,       6.1);         ( 564453.7, 4191960.2,      62.3,      62.3,       6.1);
    ( 564423.7, 4191970.2,      62.4,      62.4,       6.1);         ( 564433.7, 4191970.2,      62.4,      62.4,       6.1);
    ( 564443.7, 4191970.2,      62.9,      62.9,       6.1);         ( 564453.7, 4191970.2,      62.9,      62.9,       6.1);
    ( 564423.7, 4191980.2,      62.5,      62.5,       6.1);         ( 564433.7, 4191980.2,      62.6,      62.6,       6.1);
    ( 564443.7, 4191980.2,      63.0,      63.0,       6.1);         ( 564453.7, 4191980.2,      63.1,      63.1,       6.1);
    ( 564423.7, 4191990.2,      62.5,      62.5,       6.1);         ( 564433.7, 4191990.2,      62.7,      62.7,       6.1);
    ( 564443.7, 4191990.2,      62.9,      62.9,       6.1);         ( 564453.7, 4191990.2,      63.1,     109.3,       6.1);
    ( 564497.7, 4192021.4,      64.9,     112.2,       6.1);         ( 564507.9, 4192022.3,      65.5,     112.2,       6.1);
    ( 564521.6, 4192024.3,      66.1,     112.2,       6.1);         ( 564495.3, 4192028.2,      64.8,     112.2,       6.1);
    ( 564505.3, 4192028.2,      65.5,     112.2,       6.1);         ( 564515.3, 4192028.8,      66.0,     112.2,       6.1);
    ( 564495.3, 4192038.2,      65.2,     112.2,       6.1);         ( 564505.3, 4192038.2,      65.7,     112.2,       6.1);
    ( 564515.3, 4192038.2,      66.2,     112.2,       6.1);         ( 564495.3, 4192048.2,      65.9,     112.2,       6.1);
    ( 564505.3, 4192048.2,      66.1,     112.2,       6.1);         ( 564515.3, 4192048.2,      66.4,     112.2,       6.1);
    ( 564515.3, 4192058.2,      66.6,     112.2,       6.1);         ( 564424.0, 4191707.8,      57.7,      57.7,       6.1);
    ( 564434.0, 4191707.8,      57.9,      57.9,       6.1);         ( 564444.0, 4191707.8,      58.1,      58.1,       6.1);
    ( 564454.0, 4191707.8,      58.4,      58.4,       6.1);         ( 564424.0, 4191717.8,      57.6,      57.6,       6.1);
    ( 564434.0, 4191717.8,      57.9,      57.9,       6.1);         ( 564444.0, 4191717.8,      58.0,      58.0,       6.1);
    ( 564454.0, 4191717.8,      58.2,      58.2,       6.1);         ( 564424.0, 4191727.8,      57.5,      57.5,       6.1);
    ( 564434.0, 4191727.8,      57.9,      57.9,       6.1);         ( 564444.0, 4191727.8,      58.0,      58.0,       6.1);
    ( 564454.0, 4191727.8,      58.1,      58.1,       6.1);         ( 564424.0, 4191737.8,      57.7,      57.7,       6.1);
    ( 564434.0, 4191737.8,      57.9,      57.9,       6.1);         ( 564444.0, 4191737.8,      58.0,      58.0,       6.1);
    ( 564424.0, 4191747.8,      58.0,      58.0,       6.1);         ( 564434.0, 4191747.8,      58.1,      58.1,       6.1);
    ( 564444.0, 4191747.8,      58.2,      58.2,       6.1);         ( 564373.8, 4192097.3,      65.3,      65.3,       1.5);
    ( 564383.8, 4192097.3,      65.4,     109.3,       1.5);         ( 564393.8, 4192097.3,      65.6,     109.9,       1.5);
    ( 564403.8, 4192097.3,      65.7,     110.1,       1.5);         ( 564413.8, 4192097.3,      65.8,     110.7,       1.5);
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```
    ( 564373.8, 4192107.3,      65.8,      65.8,       1.5);         ( 564383.8, 4192107.3,      65.9,     109.3,       1.5);
    ( 564393.8, 4192107.3,      66.2,     109.9,       1.5);         ( 564403.8, 4192107.3,      66.2,     110.1,       1.5);
    ( 564413.8, 4192107.3,      66.1,     110.7,       1.5);         ( 564353.8, 4192117.3,      65.7,      65.7,       1.5);
    ( 564363.8, 4192117.3,      65.9,      65.9,       1.5);         ( 564373.8, 4192117.3,      66.1,      66.1,       1.5);
    ( 564383.8, 4192117.3,      66.4,     109.3,       1.5);         ( 564393.8, 4192117.3,      66.8,     109.9,       1.5);
    ( 564403.8, 4192117.3,      66.8,     110.1,       1.5);         ( 564413.8, 4192117.3,      66.6,     110.8,       1.5);
    ( 564353.8, 4192127.3,      66.0,      66.0,       1.5);         ( 564363.8, 4192127.3,      66.3,      66.3,       1.5);
    ( 564373.8, 4192127.3,      66.5,      66.5,       1.5);         ( 564383.8, 4192127.3,      66.8,     109.6,       1.5);
    ( 564393.8, 4192127.3,      67.1,     109.9,       1.5);         ( 564403.8, 4192127.3,      67.2,     110.5,       1.5);
    ( 564413.8, 4192127.3,      67.0,     110.8,       1.5);         ( 564373.8, 4192137.3,      67.0,      67.0,       1.5);
    ( 564383.8, 4192137.3,      67.2,     109.6,       1.5);         ( 564393.8, 4192137.3,      67.5,     109.9,       1.5);
    ( 564403.8, 4192137.3,      67.5,     110.5,       1.5);         ( 564413.8, 4192137.3,      67.3,     110.8,       1.5);
    ( 564373.8, 4192147.3,      67.4,      67.4,       1.5);         ( 564383.8, 4192147.3,      67.5,     109.8,       1.5);
    ( 564393.8, 4192147.3,      67.7,     110.1,       1.5);         ( 564403.8, 4192147.3,      67.8,     110.5,       1.5);
    ( 564413.8, 4192147.3,      67.7,     110.8,       1.5);         ( 564373.8, 4192157.3,      67.6,     109.3,       1.5);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                                ***       01/19/22
*** AERMET - VERSION  14134 ***   *** Addendum to LRDP                                                         ***       09:28:18
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*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                        *** DISCRETE CARTESIAN RECEPTORS ***
                                      (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

    ( 564383.8, 4192157.3,      67.8,     109.9,       1.5);         ( 564393.8, 4192157.3,      68.0,     110.1,       1.5);
    ( 564403.8, 4192157.3,      68.2,     110.7,       1.5);         ( 564333.8, 4192167.3,      65.7,      65.7,       1.5);
    ( 564343.8, 4192167.3,      66.4,      66.4,       1.5);         ( 564353.8, 4192167.3,      67.0,      67.0,       1.5);
    ( 564363.8, 4192167.3,      67.5,      67.5,       1.5);         ( 564373.8, 4192167.3,      67.8,     109.6,       1.5);
    ( 564383.8, 4192167.3,      68.1,     109.9,       1.5);         ( 564393.8, 4192167.3,      68.4,     110.1,       1.5);
    ( 564403.8, 4192167.3,      68.5,     110.7,       1.5);         ( 564363.8, 4192177.3,      67.5,     109.6,       1.5);
    ( 564373.8, 4192177.3,      67.9,     109.9,       1.5);         ( 564383.8, 4192177.3,      68.3,     110.1,       1.5);
    ( 564393.8, 4192177.3,      68.6,     110.5,       1.5);         ( 564403.8, 4192177.3,      68.8,     110.7,       1.5);
    ( 564363.8, 4192187.3,      67.8,     109.6,       1.5);         ( 564373.8, 4192187.3,      68.1,     109.9,       1.5);
    ( 564383.8, 4192187.3,      68.4,     110.1,       1.5);         ( 564393.8, 4192187.3,      68.7,     110.6,       1.5);
    ( 564403.8, 4192187.3,      69.0,     110.8,       1.5);         ( 564373.8, 4192197.3,      68.6,     109.9,       1.5);
    ( 564383.8, 4192197.3,      68.7,     110.3,       1.5);         ( 564393.8, 4192197.3,      68.9,     110.7,       1.5);
    ( 564403.8, 4192197.3,      69.3,     110.8,       1.5);         ( 564373.8, 4192207.3,      69.1,     109.9,       1.5);
    ( 564383.8, 4192207.3,      69.0,     110.3,       1.5);         ( 564393.8, 4192207.3,      69.3,     110.6,       1.5);
    ( 564403.8, 4192207.3,      69.7,     110.8,       1.5);         ( 564363.8, 4192217.3,      69.5,      69.5,       1.5);
    ( 564373.8, 4192217.3,      69.4,     109.9,       1.5);         ( 564383.8, 4192217.3,      69.3,     110.3,       1.5);
    ( 564393.8, 4192217.3,      69.8,     110.6,       1.5);         ( 564403.8, 4192217.3,      70.0,     110.8,       1.5);
    ( 564363.8, 4192227.3,      69.8,      69.8,       1.5);         ( 564373.8, 4192227.3,      69.8,     109.9,       1.5);
    ( 564383.8, 4192227.3,      69.8,     110.3,       1.5);         ( 564393.8, 4192227.3,      70.3,     110.5,       1.5);
    ( 564403.8, 4192227.3,      70.4,     110.8,       1.5);         ( 564323.8, 4192237.3,      67.2,      69.3,       1.5);
    ( 564333.8, 4192237.3,      68.0,      69.3,       1.5);         ( 564343.8, 4192237.3,      69.1,      69.1,       1.5);
    ( 564353.8, 4192237.3,      69.6,      69.6,       1.5);         ( 564363.8, 4192237.3,      70.0,      70.0,       1.5);
    ( 564373.8, 4192237.3,      70.2,     109.9,       1.5);         ( 564383.8, 4192237.3,      70.4,     110.1,       1.5);
    ( 564393.8, 4192237.3,      70.7,     110.5,       1.5);         ( 564363.8, 4192247.3,      70.2,      70.2,       1.5);
    ( 564373.8, 4192247.3,      70.6,     109.9,       1.5);         ( 564383.8, 4192247.3,      70.8,     110.1,       1.5);
    ( 564393.8, 4192247.3,      71.0,     110.3,       1.5);         ( 564363.8, 4192257.3,      70.6,      70.6,       1.5);
    ( 564373.8, 4192257.3,      71.0,     109.9,       1.5);         ( 564383.8, 4192257.3,      71.2,     110.1,       1.5);
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Model Output
Unit Emission Rates (1 g/s)

```
    ( 564393.8, 4192257.3,      71.3,     110.3,       1.5);         ( 564363.8, 4192267.3,      71.0,      71.0,       1.5);
    ( 564373.8, 4192267.3,      71.4,     109.9,       1.5);         ( 564383.8, 4192267.3,      71.6,     109.9,       1.5);
    ( 564393.8, 4192267.3,      71.6,     110.3,       1.5);         ( 564363.8, 4192277.3,      71.2,      71.2,       1.5);
    ( 564373.8, 4192277.3,      71.7,     109.9,       1.5);         ( 564383.8, 4192277.3,      71.9,     109.9,       1.5);
    ( 564393.8, 4192277.3,      71.9,     110.3,       1.5);         ( 564373.8, 4192287.3,      72.0,     109.8,       1.5);
    ( 564383.8, 4192287.3,      72.3,     109.9,       1.5);         ( 564393.8, 4192287.3,      72.3,     110.3,       1.5);
    ( 564373.8, 4192297.3,      72.5,      72.5,       1.5);         ( 564383.8, 4192297.3,      72.7,     109.9,       1.5);
    ( 564393.8, 4192297.3,      72.5,     110.3,       1.5);         ( 564568.3, 4192138.4,      69.9,     163.8,       6.1);
    ( 564578.3, 4192138.4,      70.4,     163.8,       6.1);         ( 564588.3, 4192138.4,      70.8,     163.8,       6.1);
    ( 564568.3, 4192148.4,      70.2,     163.8,       6.1);         ( 564578.3, 4192148.4,      70.6,     163.8,       6.1);
    ( 564588.3, 4192148.4,      71.0,     163.8,       6.1);         ( 564608.3, 4192148.4,      72.1,     163.8,       6.1);
    ( 564618.3, 4192148.4,      72.6,     163.8,       6.1);         ( 564628.3, 4192148.4,      73.2,     163.8,       6.1);
    ( 564638.3, 4192148.4,      73.5,     163.8,       6.1);         ( 564648.3, 4192148.4,      73.6,     163.8,       6.1);
    ( 564568.3, 4192158.4,      70.5,     163.8,       6.1);         ( 564578.3, 4192158.4,      70.9,     163.8,       6.1);
    ( 564588.3, 4192158.4,      71.5,     163.8,       6.1);         ( 564608.3, 4192158.4,      72.6,     163.8,       6.1);
    ( 564618.3, 4192158.4,      73.1,     163.8,       6.1);         ( 564628.3, 4192158.4,      73.7,     163.8,       6.1);
    ( 564638.3, 4192158.4,      74.0,     163.8,       6.1);         ( 564648.3, 4192158.4,      74.2,     163.8,       6.1);
    ( 564658.3, 4192158.4,      75.4,     163.8,       6.1);         ( 564668.3, 4192158.4,      76.3,     163.8,       6.1);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                                ***       01/19/22
*** AERMET - VERSION  14134 ***   *** Addendum to LRDP                                                         ***       09:28:18
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*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                  *** DISCRETE CARTESIAN RECEPTORS ***
                                (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                            (METERS)

    ( 564678.3, 4192158.4,      77.1,     163.8,       6.1);         ( 564688.3, 4192158.4,      77.5,     163.8,       6.1);
    ( 564698.3, 4192158.4,      77.8,     163.8,       6.1);         ( 564568.3, 4192168.4,      71.1,     163.8,       6.1);
    ( 564578.3, 4192168.4,      71.5,     163.8,       6.1);         ( 564588.3, 4192168.4,      72.1,     163.8,       6.1);
    ( 564608.3, 4192168.4,      73.0,     163.8,       6.1);         ( 564618.3, 4192168.4,      73.6,     163.8,       6.1);
    ( 564628.3, 4192168.4,      74.3,     163.8,       6.1);         ( 564638.3, 4192168.4,      74.8,     163.8,       6.1);
    ( 564648.3, 4192168.4,      75.2,     163.8,       6.1);         ( 564658.3, 4192168.4,      76.1,     163.8,       6.1);
    ( 564668.3, 4192168.4,      76.8,     163.8,       6.1);         ( 564678.3, 4192168.4,      77.5,     163.8,       6.1);
    ( 564688.3, 4192168.4,      78.0,     163.8,       6.1);         ( 564698.3, 4192168.4,      78.4,     163.8,       6.1);
    ( 564708.3, 4192168.4,      79.0,     163.8,       6.1);         ( 564718.3, 4192168.4,      79.6,     163.8,       6.1);
    ( 564538.3, 4192178.4,      70.3,     163.8,       6.1);         ( 564548.3, 4192178.4,      70.6,     163.8,       6.1);
    ( 564558.3, 4192178.4,      71.2,     163.8,       6.1);         ( 564568.3, 4192178.4,      72.1,     163.8,       6.1);
    ( 564578.3, 4192178.4,      72.4,     163.8,       6.1);         ( 564588.3, 4192178.4,      72.7,     163.8,       6.1);
    ( 564608.3, 4192178.4,      73.5,     163.8,       6.1);         ( 564618.3, 4192178.4,      74.1,     163.8,       6.1);
    ( 564628.3, 4192178.4,      74.8,     163.8,       6.1);         ( 564638.3, 4192178.4,      75.5,     163.8,       6.1);
    ( 564648.3, 4192178.4,      76.2,     163.8,       6.1);         ( 564658.3, 4192178.4,      76.9,     163.8,       6.1);
    ( 564668.3, 4192178.4,      77.5,     163.8,       6.1);         ( 564678.3, 4192178.4,      77.9,     163.8,       6.1);
    ( 564688.3, 4192178.4,      78.6,     163.8,       6.1);         ( 564698.3, 4192178.4,      79.2,     163.8,       6.1);
    ( 564708.3, 4192178.4,      79.8,     163.8,       6.1);         ( 564718.3, 4192178.4,      80.3,     163.8,       6.1);
    ( 564758.3, 4192178.4,      83.0,     163.8,       6.1);         ( 564768.3, 4192178.4,      83.9,     163.8,       6.1);
    ( 564778.3, 4192178.4,      85.0,     163.8,       6.1);         ( 564788.3, 4192178.4,      85.9,     163.8,       6.1);
    ( 564538.3, 4192188.4,      70.8,     163.8,       6.1);         ( 564548.3, 4192188.4,      71.0,     163.8,       6.1);
    ( 564558.3, 4192188.4,      72.0,     163.8,       6.1);         ( 564568.3, 4192188.4,      72.9,     163.8,       6.1);
    ( 564578.3, 4192188.4,      73.2,     163.8,       6.1);         ( 564588.3, 4192188.4,      73.5,     163.8,       6.1);
    ( 564608.3, 4192188.4,      74.1,     163.8,       6.1);         ( 564618.3, 4192188.4,      74.6,     163.8,       6.1);
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Model Output
Unit Emission Rates (1 g/s)

```
    ( 564628.3, 4192188.4,      75.4,     163.8,       6.1);         ( 564638.3, 4192188.4,      76.2,     163.8,       6.1);
    ( 564648.3, 4192188.4,      77.0,     163.8,       6.1);         ( 564658.3, 4192188.4,      77.8,     163.8,       6.1);
    ( 564668.3, 4192188.4,      78.2,     163.8,       6.1);         ( 564678.3, 4192188.4,      78.6,     163.8,       6.1);
    ( 564688.3, 4192188.4,      79.4,     163.8,       6.1);         ( 564698.3, 4192188.4,      80.1,     163.8,       6.1);
    ( 564708.3, 4192188.4,      80.7,     163.8,       6.1);         ( 564718.3, 4192188.4,      81.2,     163.8,       6.1);
    ( 564768.3, 4192188.4,      84.7,     163.8,       6.1);         ( 564778.3, 4192188.4,      85.8,     163.8,       6.1);
    ( 564528.3, 4192198.4,      71.1,     114.5,       6.1);         ( 564538.3, 4192198.4,      71.5,     163.8,       6.1);
    ( 564548.3, 4192198.4,      71.8,     163.8,       6.1);         ( 564558.3, 4192198.4,      72.9,     163.8,       6.1);
    ( 564568.3, 4192198.4,      73.7,     163.8,       6.1);         ( 564578.3, 4192198.4,      74.0,     163.8,       6.1);
    ( 564588.3, 4192198.4,      74.3,     163.8,       6.1);         ( 564608.3, 4192198.4,      74.9,     163.8,       6.1);
    ( 564618.3, 4192198.4,      75.5,     163.8,       6.1);         ( 564628.3, 4192198.4,      76.2,     163.8,       6.1);
    ( 564638.3, 4192198.4,      77.2,     163.8,       6.1);         ( 564648.3, 4192198.4,      78.0,     163.8,       6.1);
    ( 564658.3, 4192198.4,      78.7,     163.8,       6.1);         ( 564668.3, 4192198.4,      79.1,     163.8,       6.1);
    ( 564678.3, 4192198.4,      79.6,     163.8,       6.1);         ( 564688.3, 4192198.4,      80.5,     163.8,       6.1);
    ( 564698.3, 4192198.4,      81.3,     163.8,       6.1);         ( 564708.3, 4192198.4,      81.9,     163.8,       6.1);
    ( 564718.3, 4192198.4,      82.4,     163.8,       6.1);         ( 564768.3, 4192198.4,      85.5,     163.8,       6.1);
    ( 564778.3, 4192198.4,      86.6,     163.8,       6.1);         ( 564528.3, 4192208.4,      71.9,     114.5,       6.1);
    ( 564538.3, 4192208.4,      72.5,     114.5,       6.1);         ( 564548.3, 4192208.4,      73.0,     114.5,       6.1);
    ( 564558.3, 4192208.4,      73.7,     163.8,       6.1);         ( 564568.3, 4192208.4,      74.3,     163.8,       6.1);
    ( 564578.3, 4192208.4,      74.8,     163.8,       6.1);         ( 564588.3, 4192208.4,      75.1,     163.8,       6.1);
    ( 564608.3, 4192208.4,      75.8,     163.8,       6.1);         ( 564618.3, 4192208.4,      76.5,     163.8,       6.1);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                          ***       01/19/22
*** AERMET - VERSION  14134 ***   *** Addendum to LRDP                                                    ***       09:28:18
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*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                  *** DISCRETE CARTESIAN RECEPTORS ***
                                  (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                              (METERS)

    ( 564628.3, 4192208.4,      77.3,     163.8,       6.1);         ( 564638.3, 4192208.4,      78.2,     163.8,       6.1);
    ( 564648.3, 4192208.4,      79.0,     163.8,       6.1);         ( 564658.3, 4192208.4,      79.7,     163.8,       6.1);
    ( 564668.3, 4192208.4,      80.1,     163.8,       6.1);         ( 564678.3, 4192208.4,      80.8,     163.8,       6.1);
    ( 564688.3, 4192208.4,      81.5,     163.8,       6.1);         ( 564698.3, 4192208.4,      82.5,     163.8,       6.1);
    ( 564708.3, 4192208.4,      83.3,     163.8,       6.1);         ( 564718.3, 4192208.4,      83.5,     163.8,       6.1);
    ( 564528.3, 4192218.4,      72.7,     114.5,       6.1);         ( 564538.3, 4192218.4,      73.4,     114.5,       6.1);
    ( 564548.3, 4192218.4,      74.0,     114.5,       6.1);         ( 564558.3, 4192218.4,      74.5,     114.5,       6.1);
    ( 564568.3, 4192218.4,      74.9,     163.8,       6.1);         ( 564578.3, 4192218.4,      75.4,     163.8,       6.1);
    ( 564588.3, 4192218.4,      75.9,     163.8,       6.1);         ( 564608.3, 4192218.4,      76.9,     163.8,       6.1);
    ( 564618.3, 4192218.4,      77.7,     163.8,       6.1);         ( 564628.3, 4192218.4,      78.6,     163.8,       6.1);
    ( 564638.3, 4192218.4,      79.3,     163.8,       6.1);         ( 564648.3, 4192218.4,      80.0,     163.8,       6.1);
    ( 564658.3, 4192218.4,      80.6,     163.8,       6.1);         ( 564668.3, 4192218.4,      81.1,     163.8,       6.1);
    ( 564678.3, 4192218.4,      82.0,     163.8,       6.1);         ( 564688.3, 4192218.4,      82.5,     163.8,       6.1);
    ( 564698.3, 4192218.4,      83.5,     163.8,       6.1);         ( 564708.3, 4192218.4,      84.4,     163.8,       6.1);
    ( 564718.3, 4192218.4,      84.7,     163.8,       6.1);         ( 564738.3, 4192218.4,      85.5,     163.8,       6.1);
    ( 564748.3, 4192218.4,      86.4,     163.8,       6.1);         ( 564528.3, 4192228.4,      73.4,     114.3,       6.1);
    ( 564538.3, 4192228.4,      74.2,     114.3,       6.1);         ( 564548.3, 4192228.4,      74.8,     114.5,       6.1);
    ( 564558.3, 4192228.4,      75.4,     114.5,       6.1);         ( 564568.3, 4192228.4,      75.7,     163.8,       6.1);
    ( 564578.3, 4192228.4,      76.1,     163.8,       6.1);         ( 564588.3, 4192228.4,      76.7,     163.8,       6.1);
    ( 564608.3, 4192228.4,      78.0,     163.8,       6.1);         ( 564618.3, 4192228.4,      79.1,     163.8,       6.1);
    ( 564628.3, 4192228.4,      80.0,     163.8,       6.1);         ( 564638.3, 4192228.4,      80.5,     163.8,       6.1);
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(564648.3, 4192228.4, 81.0, 163.8, 6.1); (564658.3, 4192228.4, 81.7, 163.8, 6.1);
(564668.3, 4192228.4, 82.3, 163.8, 6.1); (564678.3, 4192228.4, 83.1, 163.8, 6.1);
(564688.3, 4192228.4, 83.8, 163.8, 6.1); (564698.3, 4192228.4, 84.7, 163.8, 6.1);
(564708.3, 4192228.4, 85.5, 163.8, 6.1); (564738.3, 4192228.4, 86.5, 163.8, 6.1);
(564748.3, 4192228.4, 87.2, 163.8, 6.1); (564758.3, 4192228.4, 87.5, 163.8, 6.1);
(564528.3, 4192238.4, 74.0, 114.2, 6.1); (564538.3, 4192238.4, 74.8, 114.3, 6.1);
(564548.3, 4192238.4, 75.5, 114.3, 6.1); (564558.3, 4192238.4, 76.2, 114.5, 6.1);
(564568.3, 4192238.4, 76.5, 114.5, 6.1); (564578.3, 4192238.4, 77.1, 163.8, 6.1);
(564588.3, 4192238.4, 77.8, 163.8, 6.1); (564608.3, 4192238.4, 79.2, 163.8, 6.1);
(564618.3, 4192238.4, 80.3, 163.8, 6.1); (564628.3, 4192238.4, 81.0, 163.8, 6.1);
(564638.3, 4192238.4, 81.5, 163.8, 6.1); (564648.3, 4192238.4, 82.1, 163.8, 6.1);
(564658.3, 4192238.4, 82.8, 163.8, 6.1); (564668.3, 4192238.4, 83.3, 163.8, 6.1);
(564678.3, 4192238.4, 84.3, 163.8, 6.1); (564688.3, 4192238.4, 85.2, 163.8, 6.1);
(564698.3, 4192238.4, 86.1, 163.8, 6.1); (564708.3, 4192238.4, 86.9, 163.8, 6.1);
(564738.3, 4192238.4, 87.9, 163.8, 6.1); (564748.3, 4192238.4, 88.2, 163.8, 6.1);
(564528.3, 4192248.4, 74.7, 114.2, 6.1); (564538.3, 4192248.4, 75.4, 114.2, 6.1);
(564548.3, 4192248.4, 76.2, 114.2, 6.1); (564558.3, 4192248.4, 76.9, 114.3, 6.1);
(564568.3, 4192248.4, 77.4, 114.5, 6.1); (564578.3, 4192248.4, 78.1, 114.5, 6.1);
(564588.3, 4192248.4, 78.8, 114.5, 6.1); (564608.3, 4192248.4, 80.3, 114.5, 6.1);
(564618.3, 4192248.4, 81.2, 114.5, 6.1); (564628.3, 4192248.4, 82.0, 114.5, 6.1);
(564638.3, 4192248.4, 82.6, 163.8, 6.1); (564648.3, 4192248.4, 83.3, 163.8, 6.1);
(564658.3, 4192248.4, 83.8, 163.8, 6.1); (564668.3, 4192248.4, 84.4, 163.8, 6.1);
(564678.3, 4192248.4, 85.6, 163.8, 6.1); (564688.3, 4192248.4, 86.4, 163.8, 6.1);
(564698.3, 4192248.4, 87.3, 163.8, 6.1); (564708.3, 4192248.4, 88.2, 163.8, 6.1);

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(564738.3, 4192248.4, 89.3, 163.8, 6.1); (564748.3, 4192248.4, 89.4, 163.8, 6.1);
(564528.3, 4192258.4, 75.3, 114.0, 6.1); (564538.3, 4192258.4, 75.9, 114.2, 6.1);
(564548.3, 4192258.4, 77.1, 114.0, 6.1); (564558.3, 4192258.4, 78.0, 114.2, 6.1);
(564568.3, 4192258.4, 78.4, 114.2, 6.1); (564578.3, 4192258.4, 79.1, 114.3, 6.1);
(564588.3, 4192258.4, 79.7, 114.3, 6.1); (564608.3, 4192258.4, 81.3, 114.5, 6.1);
(564618.3, 4192258.4, 82.2, 114.5, 6.1); (564628.3, 4192258.4, 82.8, 114.5, 6.1);
(564638.3, 4192258.4, 83.6, 114.5, 6.1); (564648.3, 4192258.4, 84.5, 114.5, 6.1);
(564658.3, 4192258.4, 85.2, 114.5, 6.1); (564668.3, 4192258.4, 85.9, 114.5, 6.1);
(564678.3, 4192258.4, 87.0, 114.5, 6.1); (564688.3, 4192258.4, 87.9, 114.5, 6.1);
(564698.3, 4192258.4, 88.9, 114.5, 6.1); (564708.3, 4192258.4, 89.7, 114.5, 6.1);
(564738.3, 4192258.4, 90.8, 163.8, 6.1); (564528.3, 4192268.4, 76.1, 111.0, 6.1);
(564538.3, 4192268.4, 76.5, 114.0, 6.1); (564548.3, 4192268.4, 77.9, 113.5, 6.1);
(564558.3, 4192268.4, 78.9, 113.5, 6.1); (564568.3, 4192268.4, 79.3, 114.0, 6.1);
(564578.3, 4192268.4, 80.0, 114.2, 6.1); (564588.3, 4192268.4, 80.7, 114.2, 6.1);
(564608.3, 4192268.4, 82.4, 114.3, 6.1); (564618.3, 4192268.4, 83.3, 114.3, 6.1);
(564628.3, 4192268.4, 84.1, 114.3, 6.1); (564638.3, 4192268.4, 84.9, 114.3, 6.1);
(564648.3, 4192268.4, 85.9, 114.3, 6.1); (564658.3, 4192268.4, 86.8, 114.3, 6.1);
(564668.3, 4192268.4, 87.7, 114.3, 6.1); (564678.3, 4192268.4, 88.4, 114.5, 6.1);

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    ( 564688.3, 4192268.4,      89.3,     114.5,       6.1);         ( 564698.3, 4192268.4,      90.3,     114.5,       6.1);
    ( 564708.3, 4192268.4,      91.2,     114.5,       6.1);         ( 564728.3, 4192268.4,      92.1,     114.5,       6.1);
    ( 564528.3, 4192278.4,      76.7,     111.0,       6.1);         ( 564538.3, 4192278.4,      77.4,     111.0,       6.1);
    ( 564548.3, 4192278.4,      78.5,     111.0,       6.1);         ( 564558.3, 4192278.4,      79.5,     111.0,       6.1);
    ( 564568.3, 4192278.4,      80.1,     111.0,       6.1);         ( 564578.3, 4192278.4,      80.9,     113.5,       6.1);
    ( 564588.3, 4192278.4,      81.6,     114.0,       6.1);         ( 564608.3, 4192278.4,      83.4,     114.0,       6.1);
    ( 564618.3, 4192278.4,      84.4,     114.0,       6.1);         ( 564628.3, 4192278.4,      85.3,     114.0,       6.1);
    ( 564638.3, 4192278.4,      86.2,     114.2,       6.1);         ( 564648.3, 4192278.4,      87.2,     114.0,       6.1);
    ( 564658.3, 4192278.4,      88.2,     114.0,       6.1);         ( 564668.3, 4192278.4,      89.1,     114.2,       6.1);
    ( 564678.3, 4192278.4,      89.8,     114.2,       6.1);         ( 564688.3, 4192278.4,      90.8,     114.2,       6.1);
    ( 564698.3, 4192278.4,      91.8,     114.2,       6.1);         ( 564708.3, 4192278.4,      92.6,     114.2,       6.1);
    ( 564728.3, 4192278.4,      93.7,     114.5,       6.1);         ( 564518.3, 4192288.4,      76.4,     111.0,       6.1);
    ( 564528.3, 4192288.4,      77.4,     111.0,       6.1);         ( 564538.3, 4192288.4,      78.1,     111.0,       6.1);
    ( 564548.3, 4192288.4,      79.2,     111.0,       6.1);         ( 564558.3, 4192288.4,      80.4,     111.0,       6.1);
    ( 564568.3, 4192288.4,      81.1,     111.0,       6.1);         ( 564578.3, 4192288.4,      81.8,     111.0,       6.1);
    ( 564588.3, 4192288.4,      82.5,     111.0,       6.1);         ( 564608.3, 4192288.4,      84.3,     111.0,       6.1);
    ( 564618.3, 4192288.4,      85.4,     111.0,       6.1);         ( 564628.3, 4192288.4,      86.3,     111.0,       6.1);
    ( 564638.3, 4192288.4,      87.3,     111.0,       6.1);         ( 564648.3, 4192288.4,      88.3,     111.0,       6.1);
    ( 564658.3, 4192288.4,      89.4,     111.0,       6.1);         ( 564668.3, 4192288.4,      90.3,     111.0,       6.1);
    ( 564678.3, 4192288.4,      91.3,     111.0,       6.1);         ( 564688.3, 4192288.4,      92.3,     111.0,       6.1);
    ( 564698.3, 4192288.4,      93.2,     111.0,       6.1);         ( 564708.3, 4192288.4,      94.0,     111.0,       6.1);
    ( 564518.3, 4192298.4,      77.2,     111.0,       6.1);         ( 564528.3, 4192298.4,      78.2,     111.0,       6.1);
    ( 564538.3, 4192298.4,      78.9,     111.0,       6.1);         ( 564548.3, 4192298.4,      79.9,     111.0,       6.1);
    ( 564558.3, 4192298.4,      81.3,     111.0,       6.1);         ( 564568.3, 4192298.4,      82.1,     111.0,       6.1);
    ( 564578.3, 4192298.4,      82.8,     111.0,       6.1);         ( 564588.3, 4192298.4,      83.4,     111.0,       6.1);
    ( 564608.3, 4192298.4,      85.0,     111.0,       6.1);         ( 564618.3, 4192298.4,      86.3,     111.0,       6.1);
    ( 564628.3, 4192298.4,      87.3,     111.0,       6.1);         ( 564638.3, 4192298.4,      88.4,     111.0,       6.1);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                          ***       01/19/22
*** AERMET - VERSION  14134 ***   *** Addendum to LRDP                                                    ***       09:28:18
                                                                                                                   PAGE  99
*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                    *** DISCRETE CARTESIAN RECEPTORS ***
                                  (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                              (METERS)

    ( 564648.3, 4192298.4,      89.5,     111.0,       6.1);         ( 564658.3, 4192298.4,      90.6,     111.0,       6.1);
    ( 564668.3, 4192298.4,      91.8,     111.0,       6.1);         ( 564678.3, 4192298.4,      93.0,     111.0,       6.1);
    ( 564688.3, 4192298.4,      93.9,     111.0,       6.1);         ( 564698.3, 4192298.4,      94.9,     111.0,       6.1);
    ( 564708.3, 4192298.4,      95.6,     111.0,       6.1);         ( 564518.3, 4192308.4,      78.0,     111.0,       6.1);
    ( 564528.3, 4192308.4,      79.0,     111.0,       6.1);         ( 564538.3, 4192308.4,      79.7,     111.0,       6.1);
    ( 564548.3, 4192308.4,      80.7,     111.0,       6.1);         ( 564558.3, 4192308.4,      82.2,     111.0,       6.1);
    ( 564568.3, 4192308.4,      83.2,     111.0,       6.1);         ( 564578.3, 4192308.4,      83.7,     111.0,       6.1);
    ( 564588.3, 4192308.4,      84.2,     111.0,       6.1);         ( 564608.3, 4192308.4,      85.8,     111.0,       6.1);
    ( 564618.3, 4192308.4,      87.4,     111.0,       6.1);         ( 564628.3, 4192308.4,      88.6,     111.0,       6.1);
    ( 564638.3, 4192308.4,      89.5,     111.0,       6.1);         ( 564648.3, 4192308.4,      90.5,     111.0,       6.1);
    ( 564658.3, 4192308.4,      91.8,     111.0,       6.1);         ( 564668.3, 4192308.4,      93.2,     111.0,       6.1);
    ( 564678.3, 4192308.4,      94.5,     111.0,       6.1);         ( 564688.3, 4192308.4,      95.5,     111.0,       6.1);
    ( 564698.3, 4192308.4,      96.7,     111.0,       6.1);         ( 564708.3, 4192308.4,      97.1,     111.0,       6.1);
    ( 564518.3, 4192318.4,      78.7,     111.0,       6.1);         ( 564528.3, 4192318.4,      79.8,     111.0,       6.1);
    ( 564538.3, 4192318.4,      80.7,     111.0,       6.1);         ( 564548.3, 4192318.4,      81.7,     111.0,       6.1);
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Model Output
Unit Emission Rates (1 g/s)

```
    ( 564558.3, 4192318.4,      83.3,     111.0,       6.1);         ( 564568.3, 4192318.4,      84.1,     111.0,       6.1);
    ( 564578.3, 4192318.4,      84.4,     111.0,       6.1);         ( 564588.3, 4192318.4,      85.0,     111.0,       6.1);
    ( 564608.3, 4192318.4,      86.6,     111.0,       6.1);         ( 564618.3, 4192318.4,      88.5,     111.0,       6.1);
    ( 564628.3, 4192318.4,      89.8,     111.0,       6.1);         ( 564343.8, 4192097.3,      64.3,      64.3,       6.1);
    ( 564353.8, 4192097.3,      64.9,      64.9,       6.1);         ( 564363.8, 4192097.3,      65.2,      65.2,       6.1);
    ( 564373.8, 4192097.3,      65.3,      65.3,       6.1);         ( 564383.8, 4192097.3,      65.4,     109.3,       6.1);
    ( 564393.8, 4192097.3,      65.6,     109.9,       6.1);         ( 564403.8, 4192097.3,      65.7,     110.1,       6.1);
    ( 564413.8, 4192097.3,      65.8,     110.7,       6.1);         ( 564343.8, 4192107.3,      64.7,      64.7,       6.1);
    ( 564353.8, 4192107.3,      65.4,      65.4,       6.1);         ( 564363.8, 4192107.3,      65.6,      65.6,       6.1);
    ( 564373.8, 4192107.3,      65.8,      65.8,       6.1);         ( 564383.8, 4192107.3,      65.9,     109.3,       6.1);
    ( 564393.8, 4192107.3,      66.2,     109.9,       6.1);         ( 564403.8, 4192107.3,      66.2,     110.1,       6.1);
    ( 564413.8, 4192107.3,      66.1,     110.7,       6.1);         ( 564343.8, 4192117.3,      65.0,      65.0,       6.1);
    ( 564353.8, 4192117.3,      65.7,      65.7,       6.1);         ( 564363.8, 4192117.3,      65.9,      65.9,       6.1);
    ( 564373.8, 4192117.3,      66.1,      66.1,       6.1);         ( 564383.8, 4192117.3,      66.4,     109.3,       6.1);
    ( 564393.8, 4192117.3,      66.8,     109.9,       6.1);         ( 564403.8, 4192117.3,      66.8,     110.1,       6.1);
    ( 564413.8, 4192117.3,      66.6,     110.8,       6.1);         ( 564343.8, 4192127.3,      65.2,      65.2,       6.1);
    ( 564353.8, 4192127.3,      66.0,      66.0,       6.1);         ( 564363.8, 4192127.3,      66.3,      66.3,       6.1);
    ( 564373.8, 4192127.3,      66.5,      66.5,       6.1);         ( 564383.8, 4192127.3,      66.8,     109.6,       6.1);
    ( 564393.8, 4192127.3,      67.1,     109.9,       6.1);         ( 564403.8, 4192127.3,      67.2,     110.5,       6.1);
    ( 564413.8, 4192127.3,      67.0,     110.8,       6.1);         ( 564333.8, 4192137.3,      64.8,      64.8,       6.1);
    ( 564343.8, 4192137.3,      65.5,      66.4,       6.1);         ( 564353.8, 4192137.3,      66.3,      66.3,       6.1);
    ( 564363.8, 4192137.3,      66.9,      66.9,       6.1);         ( 564373.8, 4192137.3,      67.0,      67.0,       6.1);
    ( 564383.8, 4192137.3,      67.2,     109.6,       6.1);         ( 564393.8, 4192137.3,      67.5,     109.9,       6.1);
    ( 564403.8, 4192137.3,      67.5,     110.5,       6.1);         ( 564413.8, 4192137.3,      67.3,     110.8,       6.1);
    ( 564333.8, 4192147.3,      65.1,      65.1,       6.1);         ( 564343.8, 4192147.3,      65.8,      65.8,       6.1);
    ( 564353.8, 4192147.3,      66.7,      66.7,       6.1);         ( 564363.8, 4192147.3,      67.2,      67.2,       6.1);
    ( 564373.8, 4192147.3,      67.4,      67.4,       6.1);         ( 564383.8, 4192147.3,      67.5,     109.8,       6.1);
    ( 564393.8, 4192147.3,      67.7,     110.1,       6.1);         ( 564403.8, 4192147.3,      67.8,     110.5,       6.1);
    ( 564413.8, 4192147.3,      67.7,     110.8,       6.1);         ( 564333.8, 4192157.3,      65.4,      65.4,       6.1);
    ( 564343.8, 4192157.3,      66.1,      66.1,       6.1);         ( 564353.8, 4192157.3,      66.9,      66.9,       6.1);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                          ***        01/19/22
*** AERMET - VERSION  14134 ***   *** Addendum to LRDP                                                    ***        09:28:18
                                                                                                                    PAGE 100
*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                        *** DISCRETE CARTESIAN RECEPTORS ***
                                    (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

    ( 564363.8, 4192157.3,      67.4,      67.4,       6.1);         ( 564373.8, 4192157.3,      67.6,     109.3,       6.1);
    ( 564383.8, 4192157.3,      67.8,     109.9,       6.1);         ( 564393.8, 4192157.3,      68.0,     110.1,       6.1);
    ( 564403.8, 4192157.3,      68.2,     110.7,       6.1);         ( 564333.8, 4192167.3,      65.7,      65.7,       6.1);
    ( 564343.8, 4192167.3,      66.4,      66.4,       6.1);         ( 564353.8, 4192167.3,      67.0,      67.0,       6.1);
    ( 564363.8, 4192167.3,      67.5,      67.5,       6.1);         ( 564373.8, 4192167.3,      67.8,     109.6,       6.1);
    ( 564383.8, 4192167.3,      68.1,     109.9,       6.1);         ( 564393.8, 4192167.3,      68.4,     110.1,       6.1);
    ( 564403.8, 4192167.3,      68.5,     110.7,       6.1);         ( 564333.8, 4192177.3,      66.0,      69.6,       6.1);
    ( 564343.8, 4192177.3,      66.6,      69.6,       6.1);         ( 564353.8, 4192177.3,      67.1,      67.1,       6.1);
    ( 564363.8, 4192177.3,      67.5,     109.6,       6.1);         ( 564373.8, 4192177.3,      67.9,     109.9,       6.1);
    ( 564383.8, 4192177.3,      68.3,     110.1,       6.1);         ( 564393.8, 4192177.3,      68.6,     110.5,       6.1);
    ( 564403.8, 4192177.3,      68.8,     110.7,       6.1);         ( 564333.8, 4192187.3,      66.3,      70.0,       6.1);
    ( 564343.8, 4192187.3,      67.0,      70.0,       6.1);         ( 564353.8, 4192187.3,      67.5,      69.6,       6.1);
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Model Output
Unit Emission Rates (1 g/s)

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( 564363.8, 4192187.3,      67.8,     109.6,       6.1);        ( 564373.8, 4192187.3,      68.1,     109.9,       6.1);
( 564383.8, 4192187.3,      68.4,     110.1,       6.1);        ( 564393.8, 4192187.3,      68.7,     110.6,       6.1);
( 564403.8, 4192187.3,      69.0,     110.8,       6.1);        ( 564333.8, 4192197.3,      66.9,      70.0,       6.1);
( 564343.8, 4192197.3,      68.1,      70.0,       6.1);        ( 564353.8, 4192197.3,      68.5,      69.6,       6.1);
( 564363.8, 4192197.3,      68.5,     109.3,       6.1);        ( 564373.8, 4192197.3,      68.6,     109.9,       6.1);
( 564383.8, 4192197.3,      68.7,     110.3,       6.1);        ( 564393.8, 4192197.3,      68.9,     110.7,       6.1);
( 564403.8, 4192197.3,      69.3,     110.8,       6.1);        ( 564333.8, 4192207.3,      67.5,      70.0,       6.1);
( 564343.8, 4192207.3,      69.1,      69.1,       6.1);        ( 564353.8, 4192207.3,      69.6,      69.6,       6.1);
( 564363.8, 4192207.3,      69.2,      69.2,       6.1);        ( 564373.8, 4192207.3,      69.1,     109.9,       6.1);
( 564383.8, 4192207.3,      69.0,     110.3,       6.1);        ( 564393.8, 4192207.3,      69.3,     110.6,       6.1);
( 564403.8, 4192207.3,      69.7,     110.8,       6.1);        ( 564323.8, 4192217.3,      66.7,      70.0,       6.1);
( 564333.8, 4192217.3,      67.8,      70.0,       6.1);        ( 564343.8, 4192217.3,      69.5,      69.5,       6.1);
( 564353.8, 4192217.3,      69.9,      69.9,       6.1);        ( 564363.8, 4192217.3,      69.5,      69.5,       6.1);
( 564373.8, 4192217.3,      69.4,     109.9,       6.1);        ( 564383.8, 4192217.3,      69.3,     110.3,       6.1);
( 564393.8, 4192217.3,      69.8,     110.6,       6.1);        ( 564403.8, 4192217.3,      70.0,     110.8,       6.1);
( 564323.8, 4192227.3,      67.0,      70.0,       6.1);        ( 564333.8, 4192227.3,      68.0,      70.0,       6.1);
( 564343.8, 4192227.3,      69.4,      69.4,       6.1);        ( 564353.8, 4192227.3,      69.9,      69.9,       6.1);
( 564363.8, 4192227.3,      69.8,      69.8,       6.1);        ( 564373.8, 4192227.3,      69.8,     109.9,       6.1);
( 564383.8, 4192227.3,      69.8,     110.3,       6.1);        ( 564393.8, 4192227.3,      70.3,     110.5,       6.1);
( 564403.8, 4192227.3,      70.4,     110.8,       6.1);        ( 564323.8, 4192237.3,      67.2,      69.3,       6.1);
( 564333.8, 4192237.3,      68.0,      69.3,       6.1);        ( 564343.8, 4192237.3,      69.1,      69.1,       6.1);
( 564353.8, 4192237.3,      69.6,      69.6,       6.1);        ( 564363.8, 4192237.3,      70.0,      70.0,       6.1);
( 564373.8, 4192237.3,      70.2,     109.9,       6.1);        ( 564383.8, 4192237.3,      70.4,     110.1,       6.1);
( 564393.8, 4192237.3,      70.7,     110.5,       6.1);        ( 564323.8, 4192247.3,      67.4,      67.4,       6.1);
( 564333.8, 4192247.3,      68.0,      68.0,       6.1);        ( 564343.8, 4192247.3,      68.6,      68.6,       6.1);
( 564353.8, 4192247.3,      69.4,      69.4,       6.1);        ( 564363.8, 4192247.3,      70.2,      70.2,       6.1);
( 564373.8, 4192247.3,      70.6,     109.9,       6.1);        ( 564383.8, 4192247.3,      70.8,     110.1,       6.1);
( 564393.8, 4192247.3,      71.0,     110.3,       6.1);        ( 564363.8, 4192257.3,      70.6,      70.6,       6.1);
( 564373.8, 4192257.3,      71.0,     109.9,       6.1);        ( 564383.8, 4192257.3,      71.2,     110.1,       6.1);
( 564393.8, 4192257.3,      71.3,     110.3,       6.1);        ( 564323.8, 4192267.3,      68.1,      71.4,       6.1);
( 564333.8, 4192267.3,      69.0,      71.3,       6.1);        ( 564343.8, 4192267.3,      69.9,      69.9,       6.1);
( 564353.8, 4192267.3,      70.5,      70.5,       6.1);        ( 564363.8, 4192267.3,      71.0,      71.0,       6.1);
( 564373.8, 4192267.3,      71.4,     109.9,       6.1);        ( 564383.8, 4192267.3,      71.6,     109.9,       6.1);
```

Model Output
Unit Emission Rates (1 g/s)

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(564393.8,	4192267.3,	71.6,	110.3,	6.1);	(564323.8,	4192277.3,	68.7,	71.4,	6.1);
(564333.8,	4192277.3,	70.0,	71.3,	6.1);	(564343.8,	4192277.3,	70.8,	70.8,	6.1);
(564353.8,	4192277.3,	71.0,	71.0,	6.1);	(564363.8,	4192277.3,	71.2,	71.2,	6.1);
(564373.8,	4192277.3,	71.7,	109.9,	6.1);	(564383.8,	4192277.3,	71.9,	109.9,	6.1);
(564393.8,	4192277.3,	71.9,	110.3,	6.1);	(564333.8,	4192287.3,	70.6,	70.6,	6.1);
(564343.8,	4192287.3,	71.3,	71.3,	6.1);	(564353.8,	4192287.3,	71.4,	71.4,	6.1);
(564363.8,	4192287.3,	71.6,	71.6,	6.1);	(564373.8,	4192287.3,	72.0,	109.8,	6.1);
(564383.8,	4192287.3,	72.3,	109.9,	6.1);	(564393.8,	4192287.3,	72.3,	110.3,	6.1);
(564373.8,	4192297.3,	72.5,	72.5,	6.1);	(564383.8,	4192297.3,	72.7,	109.9,	6.1);
(564393.8,	4192297.3,	72.5,	110.3,	6.1);	(564363.7,	4191910.2,	59.4,	59.4,	9.1);
(564373.7,	4191910.2,	59.5,	59.5,	9.1);	(564383.7,	4191910.2,	59.6,	59.6,	9.1);
(564393.7,	4191910.2,	59.8,	59.8,	9.1);	(564403.7,	4191910.2,	59.9,	59.9,	9.1);
(564413.7,	4191910.2,	60.1,	60.1,	9.1);	(564363.7,	4191920.2,	59.6,	59.6,	9.1);
(564373.7,	4191920.2,	59.6,	59.6,	9.1);	(564383.7,	4191920.2,	59.7,	59.7,	9.1);
(564393.7,	4191920.2,	59.8,	59.8,	9.1);	(564403.7,	4191920.2,	60.0,	60.0,	9.1);
(564413.7,	4191920.2,	60.2,	60.2,	9.1);	(564423.7,	4191920.2,	60.3,	60.3,	9.1);
(564433.7,	4191920.2,	60.5,	60.5,	9.1);	(564443.7,	4191920.2,	60.6,	60.6,	9.1);
(564453.7,	4191920.2,	60.8,	60.8,	9.1);	(564463.7,	4191920.2,	61.0,	61.0,	9.1);
(564353.7,	4191930.2,	59.8,	59.8,	9.1);	(564363.7,	4191930.2,	59.8,	59.8,	9.1);
(564373.7,	4191930.2,	59.8,	59.8,	9.1);	(564383.7,	4191930.2,	59.8,	59.8,	9.1);
(564393.7,	4191930.2,	59.8,	59.8,	9.1);	(564403.7,	4191930.2,	60.1,	60.1,	9.1);
(564413.7,	4191930.2,	60.3,	60.3,	9.1);	(564423.7,	4191930.2,	60.4,	60.4,	9.1);
(564433.7,	4191930.2,	60.6,	60.6,	9.1);	(564443.7,	4191930.2,	60.7,	60.7,	9.1);
(564453.7,	4191930.2,	61.0,	61.0,	9.1);	(564463.7,	4191930.2,	61.3,	61.3,	9.1);
(564373.7,	4191940.2,	60.1,	60.1,	9.1);	(564383.7,	4191940.2,	60.1,	60.1,	9.1);
(564393.7,	4191940.2,	60.0,	60.0,	9.1);	(564403.7,	4191940.2,	60.3,	60.3,	9.1);
(564413.7,	4191940.2,	60.5,	60.5,	9.1);	(564423.7,	4191940.2,	60.6,	60.6,	9.1);
(564433.7,	4191940.2,	60.7,	60.7,	9.1);	(564443.7,	4191940.2,	60.9,	60.9,	9.1);
(564453.7,	4191940.2,	61.3,	61.3,	9.1);	(564433.7,	4191950.2,	61.3,	61.3,	9.1);
(564443.7,	4191950.2,	61.5,	61.5,	9.1);	(564453.7,	4191950.2,	61.8,	61.8,	9.1);
(564433.7,	4191960.2,	62.1,	62.1,	9.1);	(564443.7,	4191960.2,	62.3,	62.3,	9.1);
(564453.7,	4191960.2,	62.3,	62.3,	9.1);	(564423.7,	4191970.2,	62.4,	62.4,	9.1);
(564433.7,	4191970.2,	62.4,	62.4,	9.1);	(564443.7,	4191970.2,	62.9,	62.9,	9.1);
(564453.7,	4191970.2,	62.9,	62.9,	9.1);	(564423.7,	4191980.2,	62.5,	62.5,	9.1);
(564433.7,	4191980.2,	62.6,	62.6,	9.1);	(564443.7,	4191980.2,	63.0,	63.0,	9.1);
(564453.7,	4191980.2,	63.1,	63.1,	9.1);	(564423.7,	4191990.2,	62.5,	62.5,	9.1);
(564433.7,	4191990.2,	62.7,	62.7,	9.1);	(564443.7,	4191990.2,	62.9,	62.9,	9.1);
(564453.7,	4191990.2,	63.1,	109.3,	9.1);	(564497.7,	4192021.4,	64.9,	112.2,	9.1);
(564507.9,	4192022.3,	65.5,	112.2,	9.1);	(564521.6,	4192024.3,	66.1,	112.2,	9.1);
(564495.3,	4192028.2,	64.8,	112.2,	9.1);	(564505.3,	4192028.2,	65.5,	112.2,	9.1);
(564515.3,	4192028.8,	66.0,	112.2,	9.1);	(564495.3,	4192038.2,	65.2,	112.2,	9.1);
(564505.3,	4192038.2,	65.7,	112.2,	9.1);	(564515.3,	4192038.2,	66.2,	112.2,	9.1);

Model Output
Unit Emission Rates (1 g/s)

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(564344.0,	4192258.2,	69.0,	70.2,	6.1);	(564353.2,	4192257.3,	69.7,	69.7,	6.1);
(564308.9,	4192313.9,	69.0,	69.0,	1.5);	(564318.9,	4192313.9,	69.3,	71.0,	1.5);
(564328.9,	4192313.9,	70.3,	71.0,	1.5);	(564338.9,	4192313.9,	71.1,	71.1,	1.5);
(564348.9,	4192313.9,	71.7,	71.7,	1.5);	(564358.9,	4192313.9,	72.5,	72.5,	1.5);
(564368.9,	4192313.9,	72.9,	72.9,	1.5);	(564378.9,	4192313.9,	73.1,	109.8,	1.5);
(564388.9,	4192313.9,	73.1,	109.9,	1.5);	(564308.9,	4192323.9,	69.3,	69.3,	1.5);
(564318.9,	4192323.9,	69.6,	71.2,	1.5);	(564328.9,	4192323.9,	70.6,	70.6,	1.5);
(564338.9,	4192323.9,	71.3,	71.3,	1.5);	(564348.9,	4192323.9,	72.0,	72.0,	1.5);
(564358.9,	4192323.9,	72.8,	72.8,	1.5);	(564368.9,	4192323.9,	73.2,	73.2,	1.5);
(564378.9,	4192323.9,	73.4,	73.4,	1.5);	(564388.9,	4192323.9,	73.4,	109.9,	1.5);
(564308.9,	4192333.9,	69.5,	69.5,	1.5);	(564318.9,	4192333.9,	69.9,	70.8,	1.5);
(564328.9,	4192333.9,	70.9,	70.9,	1.5);	(564338.9,	4192333.9,	71.6,	71.6,	1.5);
(564348.9,	4192333.9,	72.2,	72.2,	1.5);	(564358.9,	4192333.9,	73.1,	73.1,	1.5);
(564368.9,	4192333.9,	73.4,	73.4,	1.5);	(564378.9,	4192333.9,	73.7,	73.7,	1.5);
(564388.9,	4192333.9,	73.6,	109.9,	1.5);	(564308.9,	4192343.9,	69.7,	69.7,	1.5);
(564318.9,	4192343.9,	70.2,	71.1,	1.5);	(564328.9,	4192343.9,	71.2,	71.2,	1.5);
(564338.9,	4192343.9,	71.8,	71.8,	1.5);	(564348.9,	4192343.9,	72.4,	72.4,	1.5);
(564358.9,	4192343.9,	73.3,	73.3,	1.5);	(564368.9,	4192343.9,	73.6,	73.6,	1.5);
(564378.9,	4192343.9,	73.8,	73.8,	1.5);	(564388.9,	4192343.9,	73.8,	109.9,	1.5);
(564308.9,	4192353.9,	70.0,	70.0,	1.5);	(564318.9,	4192353.9,	70.5,	70.5,	1.5);
(564328.9,	4192353.9,	71.4,	71.4,	1.5);	(564338.9,	4192353.9,	71.9,	71.9,	1.5);
(564348.9,	4192353.9,	72.7,	72.7,	1.5);	(564358.9,	4192353.9,	73.6,	73.6,	1.5);
(564368.9,	4192353.9,	73.9,	73.9,	1.5);	(564378.9,	4192353.9,	74.1,	74.1,	1.5);
(564388.9,	4192353.9,	74.1,	109.9,	1.5);	(564308.9,	4192363.9,	70.2,	70.2,	1.5);
(564318.9,	4192363.9,	70.8,	70.8,	1.5);	(564328.9,	4192363.9,	71.5,	71.5,	1.5);
(564338.9,	4192363.9,	72.0,	72.0,	1.5);	(564348.9,	4192363.9,	72.8,	72.8,	1.5);
(564358.9,	4192363.9,	73.7,	73.7,	1.5);	(564368.9,	4192363.9,	74.2,	74.2,	1.5);
(564378.9,	4192363.9,	74.5,	74.5,	1.5);	(564388.9,	4192363.9,	74.5,	109.9,	1.5);
(564308.9,	4192373.9,	70.5,	70.5,	1.5);	(564318.9,	4192373.9,	70.9,	70.9,	1.5);
(564328.9,	4192373.9,	71.6,	71.6,	1.5);	(564338.9,	4192373.9,	72.1,	72.1,	1.5);
(564348.9,	4192373.9,	72.8,	72.8,	1.5);	(564358.9,	4192373.9,	73.5,	73.5,	1.5);
(564368.9,	4192373.9,	74.2,	74.2,	1.5);	(564378.9,	4192373.9,	74.6,	74.6,	1.5);
(564388.9,	4192373.9,	74.7,	74.7,	1.5);	(564308.9,	4192383.9,	70.7,	70.7,	1.5);
(564318.9,	4192383.9,	71.1,	71.1,	1.5);	(564328.9,	4192383.9,	71.7,	71.7,	1.5);
(564338.9,	4192383.9,	72.3,	72.3,	1.5);	(564348.9,	4192383.9,	72.9,	72.9,	1.5);
(564358.9,	4192383.9,	73.5,	73.5,	1.5);	(564368.9,	4192383.9,	74.1,	74.1,	1.5);
(564378.9,	4192383.9,	74.6,	74.6,	1.5);	(564388.9,	4192383.9,	74.9,	74.9,	1.5);
(564308.9,	4192393.9,	70.9,	70.9,	1.5);	(564318.9,	4192393.9,	71.4,	71.4,	1.5);
(564328.9,	4192393.9,	72.0,	72.0,	1.5);	(564338.9,	4192393.9,	72.6,	72.6,	1.5);

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    ( 564348.9, 4192393.9,      73.3,      73.3,       1.5);         ( 564358.9, 4192393.9,      73.9,      73.9,       1.5);
    ( 564368.9, 4192393.9,      74.4,      74.4,       1.5);         ( 564378.9, 4192393.9,      74.8,      74.8,       1.5);
    ( 564388.9, 4192393.9,      75.1,      75.1,       1.5);         ( 564496.4, 4192334.6,      77.5,     111.0,       1.5);
    ( 564506.4, 4192334.6,      77.8,     111.0,       1.5);         ( 564516.4, 4192334.6,      78.9,     111.0,       1.5);
    ( 564526.4, 4192334.6,      80.1,     111.0,       1.5);         ( 564536.4, 4192334.6,      81.4,     111.0,       1.5);
    ( 564546.4, 4192334.6,      82.1,     111.0,       1.5);         ( 564556.4, 4192334.6,      83.7,     111.0,       1.5);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                          ***        01/19/22
*** AERMET - VERSION  14134 ***   *** Addendum to LRDP                                                    ***        09:28:18
                                                                                                                    PAGE 103
*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                        *** DISCRETE CARTESIAN RECEPTORS ***
                                    (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

    ( 564566.4, 4192334.6,      84.8,     111.0,       1.5);         ( 564576.4, 4192334.6,      85.5,     111.0,       1.5);
    ( 564586.4, 4192334.6,      86.4,     111.0,       1.5);         ( 564596.4, 4192334.6,      86.9,     111.0,       1.5);
    ( 564496.4, 4192344.6,      77.7,     111.0,       1.5);         ( 564506.4, 4192344.6,      78.0,     111.0,       1.5);
    ( 564516.4, 4192344.6,      79.1,     111.0,       1.5);         ( 564526.4, 4192344.6,      80.5,     111.0,       1.5);
    ( 564536.4, 4192344.6,      81.3,     111.0,       1.5);         ( 564546.4, 4192344.6,      81.5,     111.0,       1.5);
    ( 564556.4, 4192344.6,      83.8,     111.0,       1.5);         ( 564566.4, 4192344.6,      85.2,     111.0,       1.5);
    ( 564576.4, 4192344.6,      86.0,     111.0,       1.5);         ( 564586.4, 4192344.6,      87.0,     111.0,       1.5);
    ( 564596.4, 4192344.6,      87.6,     111.0,       1.5);         ( 564496.4, 4192354.6,      78.0,     111.0,       1.5);
    ( 564506.4, 4192354.6,      78.3,     111.0,       1.5);         ( 564516.4, 4192354.6,      79.4,     111.0,       1.5);
    ( 564526.4, 4192354.6,      80.7,     111.0,       1.5);         ( 564536.4, 4192354.6,      81.2,     111.0,       1.5);
    ( 564546.4, 4192354.6,      81.5,     111.0,       1.5);         ( 564556.4, 4192354.6,      83.9,     111.0,       1.5);
    ( 564566.4, 4192354.6,      85.3,     111.0,       1.5);         ( 564576.4, 4192354.6,      86.2,     111.0,       1.5);
    ( 564586.4, 4192354.6,      87.3,     111.0,       1.5);         ( 564596.4, 4192354.6,      87.8,     111.0,       1.5);
    ( 564496.4, 4192364.6,      78.2,     111.0,       1.5);         ( 564506.4, 4192364.6,      78.5,     111.0,       1.5);
    ( 564516.4, 4192364.6,      79.3,     111.0,       1.5);         ( 564526.4, 4192364.6,      80.3,     111.0,       1.5);
    ( 564536.4, 4192364.6,      81.1,     111.0,       1.5);         ( 564546.4, 4192364.6,      82.1,     111.0,       1.5);
    ( 564556.4, 4192364.6,      84.1,     111.0,       1.5);         ( 564566.4, 4192364.6,      85.2,     111.0,       1.5);
    ( 564576.4, 4192364.6,      86.2,     111.0,       1.5);         ( 564586.4, 4192364.6,      87.2,     111.0,       1.5);
    ( 564596.4, 4192364.6,      87.6,     111.0,       1.5);         ( 564496.4, 4192374.6,      78.4,     111.0,       1.5);
    ( 564506.4, 4192374.6,      78.6,     147.9,       1.5);         ( 564516.4, 4192374.6,      79.1,     148.2,       1.5);
    ( 564526.4, 4192374.6,      79.7,     149.8,       1.5);         ( 564536.4, 4192374.6,      81.0,     148.2,       1.5);
    ( 564546.4, 4192374.6,      82.5,     111.0,       1.5);         ( 564556.4, 4192374.6,      83.9,     111.0,       1.5);
    ( 564566.4, 4192374.6,      85.0,     111.0,       1.5);         ( 564576.4, 4192374.6,      86.0,     111.0,       1.5);
    ( 564586.4, 4192374.6,      86.9,     111.0,       1.5);         ( 564596.4, 4192374.6,      87.2,     111.0,       1.5);
    ( 564496.4, 4192384.6,      78.6,     111.0,       1.5);         ( 564506.4, 4192384.6,      78.9,     148.2,       1.5);
    ( 564516.4, 4192384.6,      79.4,     149.2,       1.5);         ( 564526.4, 4192384.6,      79.8,     150.4,       1.5);
    ( 564536.4, 4192384.6,      81.0,     149.8,       1.5);         ( 564546.4, 4192384.6,      82.5,     148.2,       1.5);
    ( 564556.4, 4192384.6,      83.6,     111.0,       1.5);         ( 564566.4, 4192384.6,      84.5,     111.0,       1.5);
    ( 564576.4, 4192384.6,      85.5,     111.0,       1.5);         ( 564586.4, 4192384.6,      86.4,     111.0,       1.5);
    ( 564596.4, 4192384.6,      86.8,     148.2,       1.5);         ( 564496.4, 4192394.6,      78.8,     111.0,       1.5);
    ( 564506.4, 4192394.6,      79.3,     148.2,       1.5);         ( 564516.4, 4192394.6,      79.9,     148.5,       1.5);
    ( 564526.4, 4192394.6,      80.4,     150.4,       1.5);         ( 564536.4, 4192394.6,      81.2,     150.4,       1.5);
    ( 564546.4, 4192394.6,      82.3,     149.8,       1.5);         ( 564556.4, 4192394.6,      83.2,     149.8,       1.5);
    ( 564566.4, 4192394.6,      83.8,     151.0,       1.5);         ( 564576.4, 4192394.6,      84.8,     150.4,       1.5);
    ( 564586.4, 4192394.6,      85.9,     149.2,       1.5);         ( 564596.4, 4192394.6,      86.4,     151.0,       1.5);
    ( 564496.4, 4192404.6,      79.0,     147.9,       1.5);         ( 564506.4, 4192404.6,      79.4,     148.2,       1.5);
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    ( 564516.4, 4192404.6,      80.0,     149.8,       1.5);         ( 564526.4, 4192404.6,      80.5,     151.0,       1.5);
    ( 564536.4, 4192404.6,      81.2,     151.0,       1.5);         ( 564546.4, 4192404.6,      82.0,     151.0,       1.5);
    ( 564556.4, 4192404.6,      82.8,     163.8,       1.5);         ( 564566.4, 4192404.6,      83.3,     163.8,       1.5);
    ( 564576.4, 4192404.6,      84.3,     163.8,       1.5);         ( 564586.4, 4192404.6,      85.6,     163.8,       1.5);
    ( 564596.4, 4192404.6,      86.1,     163.8,       1.5);         ( 564496.4, 4192414.6,      79.2,     148.2,       1.5);
    ( 564506.4, 4192414.6,      79.6,     149.8,       1.5);         ( 564516.4, 4192414.6,      80.1,     151.0,       1.5);
    ( 564526.4, 4192414.6,      80.6,     151.0,       1.5);         ( 564536.4, 4192414.6,      81.1,     163.8,       1.5);
    ( 564546.4, 4192414.6,      81.8,     163.8,       1.5);         ( 564556.4, 4192414.6,      82.6,     163.8,       1.5);
    ( 564566.4, 4192414.6,      83.4,     163.8,       1.5);         ( 564576.4, 4192414.6,      84.4,     163.8,       1.5);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                                ***       01/19/22
*** AERMET - VERSION  14134 ***   *** Addendum to LRDP                                                          ***       09:28:18
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*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                        *** DISCRETE CARTESIAN RECEPTORS ***
                                    (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

    ( 564586.4, 4192414.6,      85.3,     163.8,       1.5);         ( 564596.4, 4192414.6,      86.1,     163.8,       1.5);
    ( 564601.6, 4192331.5,      86.9,     111.0,       1.5);         ( 564611.6, 4192331.5,      87.8,     111.0,       1.5);
    ( 564621.6, 4192331.5,      89.8,     111.0,       1.5);         ( 564631.6, 4192331.5,      91.1,     111.0,       1.5);
    ( 564641.6, 4192331.5,      91.9,     111.0,       1.5);         ( 564651.6, 4192331.5,      92.8,     111.0,       1.5);
    ( 564661.6, 4192331.5,      94.7,     111.0,       1.5);         ( 564671.6, 4192331.5,      96.4,     111.0,       1.5);
    ( 564681.6, 4192331.5,      97.8,     111.0,       1.5);         ( 564691.6, 4192331.5,      99.3,     111.0,       1.5);
    ( 564701.6, 4192331.5,     100.3,     111.0,       1.5);         ( 564601.6, 4192341.5,      87.5,     111.0,       1.5);
    ( 564611.6, 4192341.5,      88.1,     111.0,       1.5);         ( 564621.6, 4192341.5,      90.0,     111.0,       1.5);
    ( 564631.6, 4192341.5,      91.5,     111.0,       1.5);         ( 564641.6, 4192341.5,      92.4,     111.0,       1.5);
    ( 564651.6, 4192341.5,      93.5,     111.0,       1.5);         ( 564661.6, 4192341.5,      95.6,     111.0,       1.5);
    ( 564671.6, 4192341.5,      97.2,     111.0,       1.5);         ( 564681.6, 4192341.5,      98.6,     111.0,       1.5);
    ( 564691.6, 4192341.5,     100.1,     111.0,       1.5);         ( 564701.6, 4192341.5,     101.3,     111.0,       1.5);
    ( 564601.6, 4192351.5,      87.9,     111.0,       1.5);         ( 564611.6, 4192351.5,      88.4,     111.0,       1.5);
    ( 564621.6, 4192351.5,      90.3,     111.0,       1.5);         ( 564631.6, 4192351.5,      91.8,     111.0,       1.5);
    ( 564641.6, 4192351.5,      92.9,     111.0,       1.5);         ( 564651.6, 4192351.5,      94.3,     111.0,       1.5);
    ( 564661.6, 4192351.5,      96.3,     111.0,       1.5);         ( 564671.6, 4192351.5,      97.9,     111.0,       1.5);
    ( 564681.6, 4192351.5,      99.5,     111.0,       1.5);         ( 564691.6, 4192351.5,     100.8,     110.8,       1.5);
    ( 564701.6, 4192351.5,     102.1,     110.8,       1.5);         ( 564601.6, 4192361.5,      87.8,     111.0,       1.5);
    ( 564611.6, 4192361.5,      88.5,     111.0,       1.5);         ( 564621.6, 4192361.5,      90.6,     111.0,       1.5);
    ( 564631.6, 4192361.5,      92.2,     111.0,       1.5);         ( 564641.6, 4192361.5,      93.3,     111.0,       1.5);
    ( 564651.6, 4192361.5,      94.9,     111.0,       1.5);         ( 564661.6, 4192361.5,      96.5,     111.0,       1.5);
    ( 564671.6, 4192361.5,      98.3,     111.0,       1.5);         ( 564681.6, 4192361.5,     100.1,     110.8,       1.5);
    ( 564691.6, 4192361.5,     101.5,     110.8,       1.5);         ( 564701.6, 4192361.5,     102.6,     110.8,       1.5);
    ( 564601.6, 4192371.5,      87.5,     111.0,       1.5);         ( 564611.6, 4192371.5,      88.3,     111.0,       1.5);
    ( 564621.6, 4192371.5,      90.7,     111.0,       1.5);         ( 564631.6, 4192371.5,      92.4,     111.0,       1.5);
    ( 564641.6, 4192371.5,      93.6,     111.0,       1.5);         ( 564651.6, 4192371.5,      95.3,     111.0,       1.5);
    ( 564661.6, 4192371.5,      96.5,     111.0,       1.5);         ( 564671.6, 4192371.5,      98.4,     111.0,       1.5);
    ( 564681.6, 4192371.5,     100.2,     110.8,       1.5);         ( 564691.6, 4192371.5,     101.6,     110.8,       1.5);
    ( 564701.6, 4192371.5,     102.7,     110.6,       1.5);         ( 564601.6, 4192381.5,      87.1,     147.9,       1.5);
    ( 564611.6, 4192381.5,      88.1,     147.9,       1.5);         ( 564621.6, 4192381.5,      90.4,     111.0,       1.5);
    ( 564631.6, 4192381.5,      92.1,     111.0,       1.5);         ( 564641.6, 4192381.5,      93.6,     111.0,       1.5);
    ( 564651.6, 4192381.5,      95.4,     111.0,       1.5);         ( 564661.6, 4192381.5,      96.5,     111.0,       1.5);
    ( 564671.6, 4192381.5,      98.3,     111.0,       1.5);         ( 564681.6, 4192381.5,     100.0,     111.0,       1.5);
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    ( 564691.6, 4192381.5,     101.2,     110.8,       1.5);         ( 564701.6, 4192381.5,     102.6,     110.8,       1.5);
    ( 564601.6, 4192391.5,      86.8,     151.0,       1.5);         ( 564611.6, 4192391.5,      88.1,     148.2,       1.5);
    ( 564621.6, 4192391.5,      90.3,     111.0,       1.5);         ( 564631.6, 4192391.5,      91.5,     111.0,       1.5);
    ( 564641.6, 4192391.5,      92.8,     111.0,       1.5);         ( 564651.6, 4192391.5,      95.0,     111.0,       1.5);
    ( 564661.6, 4192391.5,      96.5,     111.0,       1.5);         ( 564671.6, 4192391.5,      98.0,     111.0,       1.5);
    ( 564681.6, 4192391.5,      99.6,     111.0,       1.5);         ( 564691.6, 4192391.5,     101.1,     111.0,       1.5);
    ( 564701.6, 4192391.5,     102.2,     110.8,       1.5);         ( 564601.6, 4192401.5,      86.4,     163.8,       1.5);
    ( 564611.6, 4192401.5,      88.1,     151.0,       1.5);         ( 564621.6, 4192401.5,      90.3,     111.0,       1.5);
    ( 564631.6, 4192401.5,      91.0,     111.0,       1.5);         ( 564641.6, 4192401.5,      91.5,     147.9,       1.5);
    ( 564651.6, 4192401.5,      94.6,     111.0,       1.5);         ( 564661.6, 4192401.5,      96.6,     111.0,       1.5);
    ( 564671.6, 4192401.5,      97.8,     111.0,       1.5);         ( 564681.6, 4192401.5,      99.4,     111.0,       1.5);
    ( 564691.6, 4192401.5,     101.0,     111.0,       1.5);         ( 564701.6, 4192401.5,     101.7,     111.0,       1.5);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                          ***       01/19/22
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*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                  *** DISCRETE CARTESIAN RECEPTORS ***
                                  (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                              (METERS)

    ( 564601.6, 4192411.5,      86.5,     163.8,       1.5);         ( 564611.6, 4192411.5,      88.2,     151.0,       1.5);
    ( 564621.6, 4192411.5,      90.2,     148.2,       1.5);         ( 564631.6, 4192411.5,      91.0,     148.2,       1.5);
    ( 564641.6, 4192411.5,      91.9,     148.2,       1.5);         ( 564651.6, 4192411.5,      95.4,     111.0,       1.5);
    ( 564661.6, 4192411.5,      96.9,     111.0,       1.5);         ( 564671.6, 4192411.5,      97.6,     111.0,       1.5);
    ( 564681.6, 4192411.5,      99.1,     111.0,       1.5);         ( 564691.6, 4192411.5,     100.3,     111.0,       1.5);
    ( 564701.6, 4192411.5,     100.7,     111.0,       1.5);         ( 564601.6, 4192421.5,      87.5,     163.8,       1.5);
    ( 564611.6, 4192421.5,      89.3,     149.8,       1.5);         ( 564621.6, 4192421.5,      90.7,     148.2,       1.5);
    ( 564631.6, 4192421.5,      92.0,     111.0,       1.5);         ( 564641.6, 4192421.5,      93.9,     111.0,       1.5);
    ( 564651.6, 4192421.5,      96.4,     111.0,       1.5);         ( 564661.6, 4192421.5,      97.3,     111.0,       1.5);
    ( 564671.6, 4192421.5,      98.0,     111.0,       1.5);         ( 564681.6, 4192421.5,      99.0,     111.0,       1.5);
    ( 564691.6, 4192421.5,      99.5,     111.0,       1.5);         ( 564701.6, 4192421.5,      99.6,     111.0,       1.5);
    ( 564723.6, 4192307.8,      99.3,     111.0,       1.5);         ( 564733.6, 4192307.8,     101.2,     111.0,       1.5);
    ( 564743.6, 4192307.8,     101.7,     111.0,       1.5);         ( 564753.6, 4192307.8,     102.0,     111.0,       1.5);
    ( 564763.6, 4192307.8,     102.5,     111.0,       1.5);         ( 564773.6, 4192307.8,     103.1,     111.0,       1.5);
    ( 564783.6, 4192307.8,     103.5,     111.0,       1.5);         ( 564793.6, 4192307.8,     103.7,     110.8,       1.5);
    ( 564803.6, 4192307.8,     104.3,     110.8,       1.5);         ( 564813.6, 4192307.8,     105.0,     110.8,       1.5);
    ( 564823.6, 4192307.8,     105.4,     113.9,       1.5);         ( 564833.6, 4192307.8,     105.3,     114.3,       1.5);
    ( 564843.6, 4192307.8,     106.1,     114.3,       1.5);         ( 564723.6, 4192317.8,     101.6,     111.0,       1.5);
    ( 564733.6, 4192317.8,     103.5,     110.8,       1.5);         ( 564743.6, 4192317.8,     103.8,     110.8,       1.5);
    ( 564753.6, 4192317.8,     104.3,     110.8,       1.5);         ( 564763.6, 4192317.8,     105.1,     110.8,       1.5);
    ( 564773.6, 4192317.8,     105.7,     110.8,       1.5);         ( 564783.6, 4192317.8,     105.8,     110.8,       1.5);
    ( 564793.6, 4192317.8,     106.1,     110.8,       1.5);         ( 564803.6, 4192317.8,     106.9,     110.8,       1.5);
    ( 564813.6, 4192317.8,     107.6,     110.8,       1.5);         ( 564823.6, 4192317.8,     107.8,     110.8,       1.5);
    ( 564833.6, 4192317.8,     107.2,     110.8,       1.5);         ( 564843.6, 4192317.8,     107.4,     114.0,       1.5);
    ( 564723.6, 4192327.8,     103.4,     110.8,       1.5);         ( 564733.6, 4192327.8,     105.0,     110.7,       1.5);
    ( 564743.6, 4192327.8,     106.0,     110.7,       1.5);         ( 564753.6, 4192327.8,     106.8,     110.7,       1.5);
    ( 564763.6, 4192327.8,     107.5,     110.7,       1.5);         ( 564773.6, 4192327.8,     108.1,     110.7,       1.5);
    ( 564783.6, 4192327.8,     108.3,     110.8,       1.5);         ( 564793.6, 4192327.8,     108.7,     110.7,       1.5);
    ( 564803.6, 4192327.8,     109.2,     110.7,       1.5);         ( 564813.6, 4192327.8,     109.7,     110.3,       1.5);
    ( 564823.6, 4192327.8,     109.7,     110.2,       1.5);         ( 564833.6, 4192327.8,     109.3,     110.8,       1.5);
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Model Output
Unit Emission Rates (1 g/s)

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    ( 564843.6, 4192327.8,     109.2,     110.7,       1.5);         ( 564723.6, 4192337.8,     105.0,     110.5,       1.5);
    ( 564733.6, 4192337.8,     106.9,     109.9,       1.5);         ( 564743.6, 4192337.8,     108.0,     109.6,       1.5);
    ( 564753.6, 4192337.8,     108.7,     109.3,       1.5);         ( 564763.6, 4192337.8,     109.2,     109.7,       1.5);
    ( 564773.6, 4192337.8,     109.7,     110.0,       1.5);         ( 564783.6, 4192337.8,     110.0,     110.4,       1.5);
    ( 564793.6, 4192337.8,     110.3,     110.3,       1.5);         ( 564803.6, 4192337.8,     110.4,     110.4,       1.5);
    ( 564813.6, 4192337.8,     110.6,     110.6,       1.5);         ( 564823.6, 4192337.8,     110.6,     110.6,       1.5);
    ( 564833.6, 4192337.8,     110.5,     110.5,       1.5);         ( 564843.6, 4192337.8,     110.3,     110.3,       1.5);
    ( 564723.6, 4192347.8,     106.1,     110.1,       1.5);         ( 564733.6, 4192347.8,     108.1,     109.3,       1.5);
    ( 564743.6, 4192347.8,     109.2,     109.2,       1.5);         ( 564753.6, 4192347.8,     109.5,     109.5,       1.5);
    ( 564763.6, 4192347.8,     109.9,     109.9,       1.5);         ( 564773.6, 4192347.8,     110.3,     110.3,       1.5);
    ( 564783.6, 4192347.8,     110.6,     110.6,       1.5);         ( 564793.6, 4192347.8,     110.7,     110.7,       1.5);
    ( 564803.6, 4192347.8,     110.8,     110.8,       1.5);         ( 564813.6, 4192347.8,     110.7,     110.7,       1.5);
    ( 564823.6, 4192347.8,     110.7,     110.7,       1.5);         ( 564833.6, 4192347.8,     110.7,     110.7,       1.5);
    ( 564843.6, 4192347.8,     110.6,     110.6,       1.5);         ( 564723.6, 4192357.8,     106.3,     110.1,       1.5);
    ( 564733.6, 4192357.8,     108.5,     109.6,       1.5);         ( 564743.6, 4192357.8,     109.6,     109.6,       1.5);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                                ***        01/19/22
*** AERMET - VERSION  14134 ***   *** Addendum to LRDP                                                          ***        09:28:18
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*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                        *** DISCRETE CARTESIAN RECEPTORS ***
                                    (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

    ( 564753.6, 4192357.8,     109.9,     109.9,       1.5);         ( 564763.6, 4192357.8,     110.2,     110.2,       1.5);
    ( 564773.6, 4192357.8,     110.5,     110.5,       1.5);         ( 564783.6, 4192357.8,     110.8,     110.8,       1.5);
    ( 564793.6, 4192357.8,     110.8,     110.8,       1.5);         ( 564803.6, 4192357.8,     110.8,     110.8,       1.5);
    ( 564813.6, 4192357.8,     110.7,     110.7,       1.5);         ( 564823.6, 4192357.8,     110.7,     110.7,       1.5);
    ( 564833.6, 4192357.8,     110.7,     110.7,       1.5);         ( 564843.6, 4192357.8,     110.6,     110.6,       1.5);
    ( 564723.6, 4192367.8,     106.1,     110.1,       1.5);         ( 564733.6, 4192367.8,     108.4,     109.8,       1.5);
    ( 564743.6, 4192367.8,     109.8,     109.8,       1.5);         ( 564753.6, 4192367.8,     109.9,     109.9,       1.5);
    ( 564763.6, 4192367.8,     110.1,     110.1,       1.5);         ( 564773.6, 4192367.8,     110.5,     110.5,       1.5);
    ( 564783.6, 4192367.8,     110.8,     110.8,       1.5);         ( 564793.6, 4192367.8,     110.8,     110.8,       1.5);
    ( 564803.6, 4192367.8,     110.8,     110.8,       1.5);         ( 564813.6, 4192367.8,     110.7,     110.7,       1.5);
    ( 564823.6, 4192367.8,     110.8,     110.8,       1.5);         ( 564833.6, 4192367.8,     110.7,     110.7,       1.5);
    ( 564843.6, 4192367.8,     110.3,     110.3,       1.5);         ( 564723.6, 4192377.8,     105.7,     110.3,       1.5);
    ( 564733.6, 4192377.8,     108.5,     109.9,       1.5);         ( 564743.6, 4192377.8,     109.8,     109.8,       1.5);
    ( 564753.6, 4192377.8,     109.7,     109.7,       1.5);         ( 564763.6, 4192377.8,     109.8,     109.8,       1.5);
    ( 564773.6, 4192377.8,     110.3,     110.3,       1.5);         ( 564783.6, 4192377.8,     110.8,     110.8,       1.5);
    ( 564793.6, 4192377.8,     110.9,     110.9,       1.5);         ( 564803.6, 4192377.8,     110.6,     110.6,       1.5);
    ( 564813.6, 4192377.8,     110.5,     110.5,       1.5);         ( 564823.6, 4192377.8,     110.4,     110.4,       1.5);
    ( 564833.6, 4192377.8,     110.2,     110.2,       1.5);         ( 564843.6, 4192377.8,     109.5,     110.5,       1.5);
    ( 564723.6, 4192387.8,     105.5,     110.1,       1.5);         ( 564733.6, 4192387.8,     108.2,     109.9,       1.5);
    ( 564743.6, 4192387.8,     109.4,     109.4,       1.5);         ( 564753.6, 4192387.8,     109.4,     109.4,       1.5);
    ( 564763.6, 4192387.8,     109.6,     109.6,       1.5);         ( 564773.6, 4192387.8,     109.8,     109.8,       1.5);
    ( 564783.6, 4192387.8,     110.5,     110.5,       1.5);         ( 564793.6, 4192387.8,     110.5,     110.5,       1.5);
    ( 564803.6, 4192387.8,     109.7,     110.7,       1.5);         ( 564813.6, 4192387.8,     109.3,     110.3,       1.5);
    ( 564823.6, 4192387.8,     109.3,     110.2,       1.5);         ( 564833.6, 4192387.8,     109.1,     110.0,       1.5);
    ( 564843.6, 4192387.8,     108.4,     110.8,       1.5);         ( 564723.6, 4192397.8,     104.9,     110.1,       1.5);
    ( 564733.6, 4192397.8,     106.9,     109.9,       1.5);         ( 564743.6, 4192397.8,     107.8,     109.9,       1.5);
    ( 564753.6, 4192397.8,     108.4,     109.3,       1.5);         ( 564763.6, 4192397.8,     108.7,     109.5,       1.5);
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    ( 564773.6, 4192397.8,     108.4,     111.0,       1.5);         ( 564783.6, 4192397.8,     109.3,     111.0,       1.5);
    ( 564793.6, 4192397.8,     109.4,     111.0,       1.5);         ( 564803.6, 4192397.8,     108.0,     111.0,       1.5);
    ( 564813.6, 4192397.8,     107.3,     111.0,       1.5);         ( 564823.6, 4192397.8,     107.6,     110.8,       1.5);
    ( 564833.6, 4192397.8,     107.8,     110.8,       1.5);         ( 564843.6, 4192397.8,     107.1,     163.8,       1.5);
    ( 564723.6, 4192407.8,     103.6,     111.0,       1.5);         ( 564733.6, 4192407.8,     105.0,     110.8,       1.5);
    ( 564743.6, 4192407.8,     105.8,     110.8,       1.5);         ( 564753.6, 4192407.8,     106.7,     110.8,       1.5);
    ( 564763.6, 4192407.8,     107.1,     111.0,       1.5);         ( 564773.6, 4192407.8,     106.5,     111.0,       1.5);
    ( 564783.6, 4192407.8,     107.2,     111.0,       1.5);         ( 564793.6, 4192407.8,     107.3,     111.0,       1.5);
    ( 564803.6, 4192407.8,     106.0,     111.0,       1.5);         ( 564813.6, 4192407.8,     105.3,     163.8,       1.5);
    ( 564823.6, 4192407.8,     105.8,     163.8,       1.5);         ( 564833.6, 4192407.8,     106.2,     163.8,       1.5);
    ( 564843.6, 4192407.8,     105.8,     163.8,       1.5);         ( 564723.6, 4192417.8,     101.9,     111.0,       1.5);
    ( 564733.6, 4192417.8,     103.1,     111.0,       1.5);         ( 564743.6, 4192417.8,     104.0,     111.0,       1.5);
    ( 564753.6, 4192417.8,     104.8,     111.0,       1.5);         ( 564763.6, 4192417.8,     105.2,     111.0,       1.5);
    ( 564773.6, 4192417.8,     104.9,     111.0,       1.5);         ( 564783.6, 4192417.8,     105.0,     111.0,       1.5);
    ( 564793.6, 4192417.8,     104.9,     147.9,       1.5);         ( 564803.6, 4192417.8,     104.2,     163.8,       1.5);
    ( 564813.6, 4192417.8,     103.9,     163.8,       1.5);         ( 564823.6, 4192417.8,     104.2,     163.8,       1.5);
    ( 564833.6, 4192417.8,     104.5,     163.8,       1.5);         ( 564843.6, 4192417.8,     104.5,     163.8,       1.5);
    ( 564723.6, 4192427.8,     100.3,     111.0,       1.5);         ( 564733.6, 4192427.8,     101.3,     111.0,       1.5);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                                ***       01/19/22
*** AERMET - VERSION  14134 ***   *** Addendum to LRDP                                                         ***       09:28:18
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*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                    *** DISCRETE CARTESIAN RECEPTORS ***
                                  (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                              (METERS)

    ( 564743.6, 4192427.8,     102.0,     111.0,       1.5);         ( 564753.6, 4192427.8,     102.6,     111.0,       1.5);
    ( 564763.6, 4192427.8,     102.9,     148.2,       1.5);         ( 564773.6, 4192427.8,     103.0,     163.8,       1.5);
    ( 564783.6, 4192427.8,     102.9,     163.8,       1.5);         ( 564793.6, 4192427.8,     102.7,     163.8,       1.5);
    ( 564803.6, 4192427.8,     102.6,     163.8,       1.5);         ( 564813.6, 4192427.8,     102.8,     163.8,       1.5);
    ( 564823.6, 4192427.8,     103.0,     163.8,       1.5);         ( 564833.6, 4192427.8,     103.3,     163.8,       1.5);
    ( 564843.6, 4192427.8,     103.5,     163.8,       1.5);         ( 564751.5, 4192259.2,      91.2,     163.8,       1.5);
    ( 564761.5, 4192259.2,      92.0,     163.8,       1.5);         ( 564771.5, 4192259.2,      92.6,     163.8,       1.5);
    ( 564781.5, 4192259.2,      93.5,     163.8,       1.5);         ( 564791.5, 4192259.2,      94.5,     163.8,       1.5);
    ( 564801.5, 4192259.2,      95.4,     163.8,       1.5);         ( 564811.5, 4192259.2,      96.6,     163.8,       1.5);
    ( 564821.5, 4192259.2,      98.0,     114.5,       1.5);         ( 564831.5, 4192259.2,      99.4,     114.5,       1.5);
    ( 564841.5, 4192259.2,     101.2,     114.5,       1.5);         ( 564851.5, 4192259.2,     103.6,     114.5,       1.5);
    ( 564741.5, 4192269.2,      93.0,     114.5,       1.5);         ( 564751.5, 4192269.2,      93.1,     114.5,       1.5);
    ( 564761.5, 4192269.2,      93.8,     163.8,       1.5);         ( 564771.5, 4192269.2,      94.5,     163.8,       1.5);
    ( 564781.5, 4192269.2,      95.3,     163.8,       1.5);         ( 564791.5, 4192269.2,      95.9,     163.8,       1.5);
    ( 564801.5, 4192269.2,      96.8,     163.8,       1.5);         ( 564811.5, 4192269.2,      97.7,     163.8,       1.5);
    ( 564821.5, 4192269.2,      99.0,     114.5,       1.5);         ( 564831.5, 4192269.2,     100.3,     114.5,       1.5);
    ( 564841.5, 4192269.2,     101.8,     114.5,       1.5);         ( 564851.5, 4192269.2,     104.2,     114.5,       1.5);
    ( 564741.5, 4192279.2,      95.0,     114.5,       1.5);         ( 564751.5, 4192279.2,      95.4,     114.5,       1.5);
    ( 564761.5, 4192279.2,      96.1,     114.5,       1.5);         ( 564771.5, 4192279.2,      96.8,     114.5,       1.5);
    ( 564781.5, 4192279.2,      97.2,     114.5,       1.5);         ( 564791.5, 4192279.2,      97.7,     114.5,       1.5);
    ( 564801.5, 4192279.2,      98.6,     114.5,       1.5);         ( 564811.5, 4192279.2,      99.1,     114.5,       1.5);
    ( 564821.5, 4192279.2,     100.0,     114.5,       1.5);         ( 564831.5, 4192279.2,     101.2,     114.5,       1.5);
    ( 564841.5, 4192279.2,     103.2,     114.5,       1.5);         ( 564851.5, 4192279.2,     105.4,     114.3,       1.5);
    ( 564741.5, 4192289.2,      97.1,     113.5,       1.5);         ( 564751.5, 4192289.2,      97.8,     113.9,       1.5);
```

Model Output
Unit Emission Rates (1 g/s)

```
    ( 564761.5, 4192289.2,      98.3,     114.2,       1.5);         ( 564771.5, 4192289.2,      99.2,     114.2,       1.5);
    ( 564781.5, 4192289.2,      99.6,     114.3,       1.5);         ( 564791.5, 4192289.2,      99.9,     114.5,       1.5);
    ( 564801.5, 4192289.2,     100.6,     114.5,       1.5);         ( 564811.5, 4192289.2,     100.9,     114.5,       1.5);
    ( 564821.5, 4192289.2,     101.3,     114.5,       1.5);         ( 564831.5, 4192289.2,     102.4,     114.5,       1.5);
    ( 564841.5, 4192289.2,     104.5,     114.5,       1.5);         ( 564851.5, 4192289.2,     106.2,     114.3,       1.5);
    ( 564741.5, 4192299.2,      99.4,     111.0,       1.5);         ( 564751.5, 4192299.2,      99.8,     111.0,       1.5);
    ( 564761.5, 4192299.2,     100.1,     111.0,       1.5);         ( 564771.5, 4192299.2,     101.0,     111.0,       1.5);
    ( 564781.5, 4192299.2,     101.5,     111.0,       1.5);         ( 564791.5, 4192299.2,     101.9,     114.0,       1.5);
    ( 564801.5, 4192299.2,     102.2,     114.2,       1.5);         ( 564811.5, 4192299.2,     102.7,     114.3,       1.5);
    ( 564821.5, 4192299.2,     103.2,     114.5,       1.5);         ( 564831.5, 4192299.2,     103.7,     114.5,       1.5);
    ( 564841.5, 4192299.2,     105.0,     114.5,       1.5);         ( 564851.5, 4192299.2,     106.6,     114.3,       1.5);
    ( 564803.1, 4192186.8,      87.8,     163.8,       1.5);         ( 564813.1, 4192186.8,      89.3,     163.8,       1.5);
    ( 564823.1, 4192186.8,      90.8,     163.8,       1.5);         ( 564833.1, 4192186.8,      91.8,     163.8,       1.5);
    ( 564843.1, 4192186.8,      93.0,     163.8,       1.5);         ( 564782.5, 4192212.3,      88.1,     163.8,       1.5);
    ( 564803.1, 4192196.8,      88.9,     163.8,       1.5);         ( 564813.1, 4192196.8,      90.4,     163.8,       1.5);
    ( 564823.1, 4192196.8,      92.2,     163.8,       1.5);         ( 564833.1, 4192196.8,      93.0,     163.8,       1.5);
    ( 564843.1, 4192196.8,      94.4,     163.8,       1.5);         ( 564853.1, 4192196.8,      96.0,     114.5,       1.5);
    ( 564863.1, 4192196.8,      97.4,     114.5,       1.5);         ( 564873.1, 4192196.8,      98.0,     114.5,       1.5);
    ( 564803.1, 4192206.8,      90.3,     163.8,       1.5);         ( 564813.1, 4192206.8,      91.4,     163.8,       1.5);
    ( 564823.1, 4192206.8,      92.9,     163.8,       1.5);         ( 564833.1, 4192206.8,      94.0,     163.8,       1.5);
    ( 564843.1, 4192206.8,      95.5,     163.8,       1.5);         ( 564853.1, 4192206.8,      97.0,     114.5,       1.5);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                          ***       01/19/22
*** AERMET - VERSION  14134 ***   *** Addendum to LRDP                                                    ***       09:28:18
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*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                  *** DISCRETE CARTESIAN RECEPTORS ***
                                (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                            (METERS)

    ( 564863.1, 4192206.8,      98.4,     114.5,       1.5);         ( 564873.1, 4192206.8,      99.0,     114.5,       1.5);
    ( 564803.1, 4192216.8,      91.1,     163.8,       1.5);         ( 564813.1, 4192216.8,      92.1,     163.8,       1.5);
    ( 564823.1, 4192216.8,      93.2,     163.8,       1.5);         ( 564833.1, 4192216.8,      94.8,     163.8,       1.5);
    ( 564843.1, 4192216.8,      96.8,     114.5,       1.5);         ( 564853.1, 4192216.8,      98.2,     114.5,       1.5);
    ( 564863.1, 4192216.8,      99.3,     114.5,       1.5);         ( 564873.1, 4192216.8,      99.9,     114.5,       1.5);
    ( 564803.1, 4192226.8,      91.9,     163.8,       1.5);         ( 564813.1, 4192226.8,      93.1,     163.8,       1.5);
    ( 564823.1, 4192226.8,      94.3,     163.8,       1.5);         ( 564833.1, 4192226.8,      95.9,     163.8,       1.5);
    ( 564843.1, 4192226.8,      98.3,     114.5,       1.5);         ( 564853.1, 4192226.8,     100.2,     114.5,       1.5);
    ( 564863.1, 4192226.8,     101.0,     114.5,       1.5);         ( 564873.1, 4192226.8,     101.4,     114.5,       1.5);
    ( 564803.1, 4192236.8,      93.0,     163.8,       1.5);         ( 564813.1, 4192236.8,      94.4,     163.8,       1.5);
    ( 564823.1, 4192236.8,      95.7,     163.8,       1.5);         ( 564833.1, 4192236.8,      96.9,     163.8,       1.5);
    ( 564843.1, 4192236.8,      99.4,     114.5,       1.5);         ( 564853.1, 4192236.8,     101.7,     114.5,       1.5);
    ( 564863.1, 4192236.8,     102.7,     114.5,       1.5);         ( 564873.1, 4192236.8,     103.0,     114.5,       1.5);
    ( 564803.1, 4192246.8,      94.0,     163.8,       1.5);         ( 564813.1, 4192246.8,      95.5,     163.8,       1.5);
    ( 564823.1, 4192246.8,      96.9,     163.8,       1.5);         ( 564833.1, 4192246.8,      98.3,     114.5,       1.5);
    ( 564843.1, 4192246.8,     100.5,     114.5,       1.5);         ( 564853.1, 4192246.8,     102.8,     114.5,       1.5);
    ( 564863.1, 4192246.8,     104.0,     114.3,       1.5);         ( 564873.1, 4192246.8,     104.4,     114.3,       1.5);
    ( 564771.2, 4192228.8,      88.5,     163.8,       1.5);         ( 564781.2, 4192228.8,      89.5,     163.8,       1.5);
    ( 564791.2, 4192228.8,      90.6,     163.8,       1.5);         ( 564771.2, 4192238.8,      89.5,     163.8,       1.5);
    ( 564781.2, 4192238.8,      90.6,     163.8,       1.5);         ( 564791.2, 4192238.8,      91.7,     163.8,       1.5);
    ( 564771.2, 4192248.8,      91.0,     163.8,       1.5);         ( 564781.2, 4192248.8,      91.9,     163.8,       1.5);
```

Model Output
Unit Emission Rates (1 g/s)

```
( 564791.2, 4192248.8,      92.9,     163.8,       1.5);        ( 564863.3, 4192259.2,     105.4,     114.2,       1.5);
( 564893.3, 4192259.2,     109.0,     112.2,       1.5);        ( 564903.3, 4192259.2,     111.8,     112.2,       1.5);
( 564913.3, 4192259.2,     112.2,     112.2,       1.5);        ( 564923.3, 4192259.2,     111.3,     111.6,       1.5);
( 564933.3, 4192259.2,     109.6,     112.2,       1.5);        ( 564943.3, 4192259.2,     109.2,     111.9,       1.5);
( 564953.3, 4192259.2,     109.2,     111.9,       1.5);        ( 564963.3, 4192259.2,     108.6,     111.9,       1.5);
( 564973.3, 4192259.2,     108.1,     111.9,       1.5);        ( 564983.3, 4192259.2,     107.0,     163.8,       1.5);
( 564993.3, 4192259.2,     104.7,     163.8,       1.5);        ( 565003.3, 4192259.2,     102.0,     163.8,       1.5);
( 565013.3, 4192259.2,      99.7,     163.8,       1.5);        ( 565023.3, 4192259.2,      98.7,     163.8,       1.5);
( 565033.3, 4192259.2,      98.4,     163.8,       1.5);        ( 565043.3, 4192259.2,      98.1,     163.8,       1.5);
( 564863.3, 4192269.2,     106.3,     114.1,       1.5);        ( 564893.3, 4192269.2,     109.8,     112.2,       1.5);
( 564903.3, 4192269.2,     112.0,     112.2,       1.5);        ( 564913.3, 4192269.2,     112.1,     112.1,       1.5);
( 564923.3, 4192269.2,     111.1,     111.5,       1.5);        ( 564933.3, 4192269.2,     109.8,     112.2,       1.5);
( 564943.3, 4192269.2,     110.3,     111.9,       1.5);        ( 564953.3, 4192269.2,     110.6,     111.8,       1.5);
( 564963.3, 4192269.2,     109.6,     111.9,       1.5);        ( 564973.3, 4192269.2,     108.8,     163.8,       1.5);
( 564983.3, 4192269.2,     108.0,     163.8,       1.5);        ( 564993.3, 4192269.2,     105.9,     163.8,       1.5);
( 565003.3, 4192269.2,     103.1,     163.8,       1.5);        ( 565013.3, 4192269.2,     100.9,     163.8,       1.5);
( 565023.3, 4192269.2,     100.1,     163.8,       1.5);        ( 565033.3, 4192269.2,      99.8,     163.8,       1.5);
( 565043.3, 4192269.2,      99.1,     163.8,       1.5);        ( 564863.3, 4192279.2,     107.1,     113.9,       1.5);
( 564893.3, 4192279.2,     110.0,     112.2,       1.5);        ( 564903.3, 4192279.2,     111.3,     111.3,       1.5);
( 564913.3, 4192279.2,     112.0,     112.0,       1.5);        ( 564923.3, 4192279.2,     111.4,     111.7,       1.5);
( 564933.3, 4192279.2,     110.5,     112.1,       1.5);        ( 564943.3, 4192279.2,     111.3,     111.9,       1.5);
( 564953.3, 4192279.2,     111.7,     111.7,       1.5);        ( 564963.3, 4192279.2,     110.5,     111.8,       1.5);
( 564973.3, 4192279.2,     109.5,     163.8,       1.5);        ( 564983.3, 4192279.2,     108.7,     163.8,       1.5);
( 564993.3, 4192279.2,     106.5,     163.8,       1.5);        ( 565003.3, 4192279.2,     103.8,     163.8,       1.5);
```

Model Output
Unit Emission Rates (1 g/s)

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(	565013.3,	4192279.2,	102.3,	163.8,	1.5);	(565023.3,	4192279.2,	101.9,	163.8,	1.5);
(	565033.3,	4192279.2,	101.5,	163.8,	1.5);	(565043.3,	4192279.2,	100.4,	163.8,	1.5);
(	564863.3,	4192289.2,	107.6,	114.2,	1.5);	(564893.3,	4192289.2,	110.7,	111.1,	1.5);
(	564903.3,	4192289.2,	111.3,	111.3,	1.5);	(564913.3,	4192289.2,	112.0,	112.0,	1.5);
(	564923.3,	4192289.2,	111.9,	111.9,	1.5);	(564933.3,	4192289.2,	111.5,	111.5,	1.5);
(	564943.3,	4192289.2,	111.9,	111.9,	1.5);	(564953.3,	4192289.2,	111.8,	111.8,	1.5);
(	564963.3,	4192289.2,	110.8,	111.8,	1.5);	(564973.3,	4192289.2,	109.7,	163.8,	1.5);
(	564983.3,	4192289.2,	109.0,	163.8,	1.5);	(564993.3,	4192289.2,	107.2,	163.8,	1.5);
(	565003.3,	4192289.2,	105.0,	163.8,	1.5);	(565013.3,	4192289.2,	103.8,	163.8,	1.5);
(	565023.3,	4192289.2,	103.2,	163.8,	1.5);	(565033.3,	4192289.2,	102.6,	163.8,	1.5);
(	565043.3,	4192289.2,	101.3,	163.8,	1.5);	(564863.3,	4192299.2,	108.2,	114.2,	1.5);
(	564893.3,	4192299.2,	111.5,	111.5,	1.5);	(564903.3,	4192299.2,	111.8,	111.8,	1.5);
(	564913.3,	4192299.2,	112.0,	112.0,	1.5);	(564923.3,	4192299.2,	112.1,	112.1,	1.5);
(	564933.3,	4192299.2,	112.1,	113.4,	1.5);	(564943.3,	4192299.2,	112.0,	114.3,	1.5);
(	564953.3,	4192299.2,	111.3,	114.3,	1.5);	(564963.3,	4192299.2,	110.4,	163.8,	1.5);
(	564973.3,	4192299.2,	109.5,	163.8,	1.5);	(564983.3,	4192299.2,	108.7,	163.8,	1.5);
(	564993.3,	4192299.2,	107.5,	163.8,	1.5);	(565003.3,	4192299.2,	106.0,	163.8,	1.5);
(	565013.3,	4192299.2,	105.0,	163.8,	1.5);	(565023.3,	4192299.2,	104.1,	163.8,	1.5);
(	565033.3,	4192299.2,	103.2,	163.8,	1.5);	(564863.3,	4192309.2,	108.8,	113.9,	1.5);
(	564893.3,	4192309.2,	111.3,	113.9,	1.5);	(564903.3,	4192309.2,	111.7,	114.2,	1.5);
(	564913.3,	4192309.2,	112.4,	114.1,	1.5);	(564923.3,	4192309.2,	112.9,	114.3,	1.5);
(	564933.3,	4192309.2,	113.2,	113.2,	1.5);	(564943.3,	4192309.2,	112.8,	114.3,	1.5);
(	564953.3,	4192309.2,	111.9,	114.3,	1.5);	(564963.3,	4192309.2,	110.7,	163.8,	1.5);
(	564973.3,	4192309.2,	109.4,	163.8,	1.5);	(564983.3,	4192309.2,	108.4,	163.8,	1.5);
(	564993.3,	4192309.2,	107.5,	163.8,	1.5);	(565003.3,	4192309.2,	106.5,	163.8,	1.5);
(	565013.3,	4192309.2,	105.5,	163.8,	1.5);	(565023.3,	4192309.2,	104.6,	163.8,	1.5);
(	565033.3,	4192309.2,	103.7,	163.8,	1.5);	(564863.3,	4192319.2,	109.3,	113.9,	1.5);
(	564893.3,	4192319.2,	111.3,	114.3,	1.5);	(564903.3,	4192319.2,	112.5,	114.2,	1.5);
(	564913.3,	4192319.2,	113.5,	113.7,	1.5);	(564923.3,	4192319.2,	114.0,	114.0,	1.5);
(	564933.3,	4192319.2,	114.1,	114.1,	1.5);	(564943.3,	4192319.2,	113.8,	113.8,	1.5);
(	564953.3,	4192319.2,	113.0,	113.9,	1.5);	(564963.3,	4192319.2,	111.3,	163.8,	1.5);
(	564973.3,	4192319.2,	109.4,	163.8,	1.5);	(564983.3,	4192319.2,	108.5,	163.8,	1.5);
(	564993.3,	4192319.2,	107.6,	163.8,	1.5);	(565003.3,	4192319.2,	106.6,	163.8,	1.5);
(	565013.3,	4192319.2,	105.7,	163.8,	1.5);	(565023.3,	4192319.2,	105.0,	163.8,	1.5);
(	565033.3,	4192319.2,	104.1,	163.8,	1.5);	(564883.3,	4192329.2,	110.8,	114.2,	1.5);
(	564893.3,	4192329.2,	112.2,	114.0,	1.5);	(564903.3,	4192329.2,	113.5,	113.9,	1.5);
(	564913.3,	4192329.2,	114.1,	114.1,	1.5);	(564923.3,	4192329.2,	114.3,	114.3,	1.5);
(	564933.3,	4192329.2,	114.4,	114.4,	1.5);	(564943.3,	4192329.2,	114.1,	114.1,	1.5);
(	564953.3,	4192329.2,	113.3,	113.3,	1.5);	(564963.3,	4192329.2,	111.3,	163.8,	1.5);
(	564973.3,	4192329.2,	109.3,	163.8,	1.5);	(564983.3,	4192329.2,	108.5,	163.8,	1.5);
(	564993.3,	4192329.2,	107.6,	163.8,	1.5);	(565003.3,	4192329.2,	106.7,	163.8,	1.5);
(	565013.3,	4192329.2,	105.9,	163.8,	1.5);	(565023.3,	4192329.2,	105.4,	163.8,	1.5);

Model Output
Unit Emission Rates (1 g/s)

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(564933.3,	4192339.2,	114.4,	114.4,	1.5);	(564943.3,	4192339.2,	113.9,	113.9,	1.5);
(564953.3,	4192339.2,	113.1,	113.1,	1.5);	(564963.3,	4192339.2,	111.0,	163.8,	1.5);
(564973.3,	4192339.2,	109.2,	163.8,	1.5);	(564983.3,	4192339.2,	108.4,	163.8,	1.5);
(564993.3,	4192339.2,	107.5,	163.8,	1.5);	(565003.3,	4192339.2,	106.6,	163.8,	1.5);
(565013.3,	4192339.2,	106.1,	163.8,	1.5);	(565023.3,	4192339.2,	105.7,	163.8,	1.5);
(565033.3,	4192339.2,	105.2,	163.8,	1.5);	(564883.3,	4192349.2,	111.4,	114.0,	1.5);
(564893.3,	4192349.2,	112.9,	112.9,	1.5);	(564903.3,	4192349.2,	113.7,	113.7,	1.5);
(564913.3,	4192349.2,	114.0,	114.0,	1.5);	(564923.3,	4192349.2,	114.0,	114.0,	1.5);
(564933.3,	4192349.2,	113.5,	114.4,	1.5);	(564943.3,	4192349.2,	112.6,	163.8,	1.5);
(564953.3,	4192349.2,	112.1,	163.8,	1.5);	(564963.3,	4192349.2,	110.4,	163.8,	1.5);
(564973.3,	4192349.2,	109.0,	163.8,	1.5);	(564983.3,	4192349.2,	108.0,	163.8,	1.5);
(564993.3,	4192349.2,	107.2,	163.8,	1.5);	(565003.3,	4192349.2,	106.5,	163.8,	1.5);
(565013.3,	4192349.2,	106.2,	163.8,	1.5);	(565023.3,	4192349.2,	106.0,	163.8,	1.5);
(565033.3,	4192349.2,	105.5,	163.8,	1.5);	(564883.3,	4192359.2,	110.7,	114.1,	1.5);
(564893.3,	4192359.2,	112.0,	113.7,	1.5);	(564903.3,	4192359.2,	113.0,	113.0,	1.5);
(564913.3,	4192359.2,	113.2,	113.2,	1.5);	(564923.3,	4192359.2,	112.5,	114.4,	1.5);
(564933.3,	4192359.2,	111.0,	163.8,	1.5);	(564943.3,	4192359.2,	109.8,	163.8,	1.5);
(564953.3,	4192359.2,	109.8,	163.8,	1.5);	(564963.3,	4192359.2,	108.8,	163.8,	1.5);
(564973.3,	4192359.2,	108.0,	163.8,	1.5);	(564983.3,	4192359.2,	107.3,	163.8,	1.5);
(564993.3,	4192359.2,	106.7,	163.8,	1.5);	(565003.3,	4192359.2,	106.5,	163.8,	1.5);
(565013.3,	4192359.2,	106.4,	163.8,	1.5);	(565023.3,	4192359.2,	106.3,	163.8,	1.5);
(564883.3,	4192369.2,	110.1,	114.1,	1.5);	(564893.3,	4192369.2,	110.7,	114.1,	1.5);
(564903.3,	4192369.2,	111.7,	113.9,	1.5);	(564913.3,	4192369.2,	111.3,	163.8,	1.5);
(564923.3,	4192369.2,	109.6,	163.8,	1.5);	(564933.3,	4192369.2,	108.1,	163.8,	1.5);
(564943.3,	4192369.2,	107.3,	163.8,	1.5);	(564953.3,	4192369.2,	107.3,	163.8,	1.5);
(564963.3,	4192369.2,	107.0,	163.8,	1.5);	(564973.3,	4192369.2,	106.8,	163.8,	1.5);
(564983.3,	4192369.2,	106.5,	163.8,	1.5);	(564993.3,	4192369.2,	106.4,	163.8,	1.5);
(565003.3,	4192369.2,	106.5,	163.8,	1.5);	(565013.3,	4192369.2,	106.6,	163.8,	1.5);
(565023.3,	4192369.2,	106.4,	163.8,	1.5);	(564863.3,	4192379.2,	108.7,	113.7,	1.5);
(564873.3,	4192379.2,	109.3,	163.8,	1.5);	(564883.3,	4192379.2,	109.6,	163.8,	1.5);
(564893.3,	4192379.2,	109.7,	163.8,	1.5);	(564903.3,	4192379.2,	110.0,	163.8,	1.5);
(564913.3,	4192379.2,	109.2,	163.8,	1.5);	(564923.3,	4192379.2,	107.5,	163.8,	1.5);
(564933.3,	4192379.2,	106.6,	163.8,	1.5);	(564943.3,	4192379.2,	106.3,	163.8,	1.5);
(564953.3,	4192379.2,	106.3,	163.8,	1.5);	(564963.3,	4192379.2,	106.3,	163.8,	1.5);
(564973.3,	4192379.2,	106.3,	163.8,	1.5);	(564983.3,	4192379.2,	106.2,	163.8,	1.5);
(564993.3,	4192379.2,	106.2,	163.8,	1.5);	(565003.3,	4192379.2,	106.5,	163.8,	1.5);
(565013.3,	4192379.2,	106.9,	163.8,	1.5);	(565023.3,	4192379.2,	106.7,	163.8,	1.5);
(564863.3,	4192389.2,	107.8,	163.8,	1.5);	(564873.3,	4192389.2,	108.6,	163.8,	1.5);
(564883.3,	4192389.2,	109.1,	163.8,	1.5);	(564893.3,	4192389.2,	109.0,	163.8,	1.5);

Model Output
Unit Emission Rates (1 g/s)

```
    ( 564903.3, 4192389.2,     108.8,     163.8,       1.5);         ( 564913.3, 4192389.2,     108.1,     163.8,       1.5);
    ( 564923.3, 4192389.2,     107.1,     163.8,       1.5);         ( 564933.3, 4192389.2,     106.6,     163.8,       1.5);
    ( 564943.3, 4192389.2,     106.4,     163.8,       1.5);         ( 564953.3, 4192389.2,     106.4,     163.8,       1.5);
    ( 564963.3, 4192389.2,     106.4,     163.8,       1.5);         ( 564973.3, 4192389.2,     106.3,     163.8,       1.5);
    ( 564983.3, 4192389.2,     106.3,     163.8,       1.5);         ( 564993.3, 4192389.2,     106.2,     163.8,       1.5);
    ( 565003.3, 4192389.2,     106.7,     163.8,       1.5);         ( 565013.3, 4192389.2,     107.2,     163.8,       1.5);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                                ***        01/19/22
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*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                        *** DISCRETE CARTESIAN RECEPTORS ***
                                    (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

    ( 565023.3, 4192389.2,     107.1,     163.8,       1.5);         ( 564863.3, 4192399.2,     106.9,     163.8,       1.5);
    ( 564873.3, 4192399.2,     107.7,     163.8,       1.5);         ( 564883.3, 4192399.2,     108.3,     163.8,       1.5);
    ( 564893.3, 4192399.2,     108.3,     163.8,       1.5);         ( 564903.3, 4192399.2,     108.1,     163.8,       1.5);
    ( 564913.3, 4192399.2,     107.8,     163.8,       1.5);         ( 564923.3, 4192399.2,     107.3,     163.8,       1.5);
    ( 564933.3, 4192399.2,     106.9,     163.8,       1.5);         ( 564943.3, 4192399.2,     106.8,     163.8,       1.5);
    ( 564953.3, 4192399.2,     106.8,     163.8,       1.5);         ( 564963.3, 4192399.2,     106.8,     163.8,       1.5);
    ( 564973.3, 4192399.2,     106.8,     163.8,       1.5);         ( 564983.3, 4192399.2,     106.8,     163.8,       1.5);
    ( 564993.3, 4192399.2,     106.8,     163.8,       1.5);         ( 565003.3, 4192399.2,     107.2,     163.8,       1.5);
    ( 565013.3, 4192399.2,     107.7,     163.8,       1.5);         ( 565023.3, 4192399.2,     107.7,     163.8,       1.5);
    ( 564863.3, 4192409.2,     105.9,     163.8,       1.5);         ( 564873.3, 4192409.2,     106.5,     163.8,       1.5);
    ( 564883.3, 4192409.2,     107.4,     163.8,       1.5);         ( 564893.3, 4192409.2,     107.4,     163.8,       1.5);
    ( 564903.3, 4192409.2,     107.3,     163.8,       1.5);         ( 564913.3, 4192409.2,     107.4,     163.8,       1.5);
    ( 564923.3, 4192409.2,     107.2,     163.8,       1.5);         ( 564933.3, 4192409.2,     106.8,     163.8,       1.5);
    ( 564943.3, 4192409.2,     106.9,     163.8,       1.5);         ( 564953.3, 4192409.2,     107.2,     163.8,       1.5);
    ( 564963.3, 4192409.2,     107.3,     163.8,       1.5);         ( 564973.3, 4192409.2,     107.4,     163.8,       1.5);
    ( 564983.3, 4192409.2,     107.5,     163.8,       1.5);         ( 564993.3, 4192409.2,     107.6,     163.8,       1.5);
    ( 565003.3, 4192409.2,     107.9,     163.8,       1.5);         ( 565013.3, 4192409.2,     108.1,     163.8,       1.5);
    ( 565023.3, 4192409.2,     108.2,     163.8,       1.5);         ( 564863.3, 4192419.2,     104.9,     163.8,       1.5);
    ( 564873.3, 4192419.2,     105.4,     163.8,       1.5);         ( 564883.3, 4192419.2,     106.5,     163.8,       1.5);
    ( 564893.3, 4192419.2,     106.5,     163.8,       1.5);         ( 564903.3, 4192419.2,     106.2,     163.8,       1.5);
    ( 564913.3, 4192419.2,     106.5,     163.8,       1.5);         ( 564923.3, 4192419.2,     106.5,     163.8,       1.5);
    ( 564933.3, 4192419.2,     106.3,     163.8,       1.5);         ( 564943.3, 4192419.2,     106.7,     163.8,       1.5);
    ( 564953.3, 4192419.2,     107.5,     163.8,       1.5);         ( 564963.3, 4192419.2,     107.8,     163.8,       1.5);
    ( 564973.3, 4192419.2,     107.8,     163.8,       1.5);         ( 564983.3, 4192419.2,     107.9,     163.8,       1.5);
    ( 564993.3, 4192419.2,     108.1,     163.8,       1.5);         ( 565003.3, 4192419.2,     108.3,     163.8,       1.5);
    ( 565013.3, 4192419.2,     108.4,     163.8,       1.5);         ( 564892.7, 4192239.8,     104.4,     114.5,       1.5);
    ( 564902.7, 4192239.8,     107.1,     112.2,       1.5);         ( 564912.7, 4192239.8,     107.4,     112.2,       1.5);
    ( 564863.3, 4192429.2,     104.0,     163.8,       1.5);         ( 564873.3, 4192429.2,     104.5,     163.8,       1.5);
    ( 564883.3, 4192429.2,     105.3,     163.8,       1.5);         ( 564893.3, 4192429.2,     105.3,     163.8,       1.5);
    ( 564903.3, 4192429.2,     105.4,     163.8,       1.5);         ( 564913.3, 4192429.2,     105.6,     163.8,       1.5);
    ( 564923.3, 4192429.2,     105.7,     163.8,       1.5);         ( 564933.3, 4192429.2,     106.0,     163.8,       1.5);
    ( 564943.3, 4192429.2,     106.7,     163.8,       1.5);         ( 564953.3, 4192429.2,     107.6,     163.8,       1.5);
    ( 564963.3, 4192429.2,     108.0,     163.8,       1.5);         ( 564973.3, 4192429.2,     108.0,     163.8,       1.5);
    ( 564983.3, 4192429.2,     108.1,     163.8,       1.5);         ( 564993.3, 4192429.2,     108.3,     163.8,       1.5);
    ( 565003.3, 4192429.2,     108.7,     163.8,       1.5);         ( 565013.3, 4192429.2,     108.8,     163.8,       1.5);
    ( 564892.7, 4192249.8,     106.9,     112.2,       1.5);         ( 564902.7, 4192249.8,     110.8,     112.2,       1.5);
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    ( 564912.7, 4192249.8,     111.5,     111.5,       1.5);        ( 564308.9, 4192313.9,      69.0,      69.0,       6.1);
    ( 564318.9, 4192313.9,      69.3,      71.0,       6.1);        ( 564328.9, 4192313.9,      70.3,      71.0,       6.1);
    ( 564338.9, 4192313.9,      71.1,      71.1,       6.1);        ( 564348.9, 4192313.9,      71.7,      71.7,       6.1);
    ( 564358.9, 4192313.9,      72.5,      72.5,       6.1);        ( 564368.9, 4192313.9,      72.9,      72.9,       6.1);
    ( 564378.9, 4192313.9,      73.1,     109.8,       6.1);        ( 564388.9, 4192313.9,      73.1,     109.9,       6.1);
    ( 564308.9, 4192323.9,      69.3,      69.3,       6.1);        ( 564318.9, 4192323.9,      69.6,      71.2,       6.1);
    ( 564328.9, 4192323.9,      70.6,      70.6,       6.1);        ( 564338.9, 4192323.9,      71.3,      71.3,       6.1);
    ( 564348.9, 4192323.9,      72.0,      72.0,       6.1);        ( 564358.9, 4192323.9,      72.8,      72.8,       6.1);
    ( 564368.9, 4192323.9,      73.2,      73.2,       6.1);        ( 564378.9, 4192323.9,      73.4,      73.4,       6.1);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                          ***        01/19/22
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*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                        *** DISCRETE CARTESIAN RECEPTORS ***
                                    (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

    ( 564388.9, 4192323.9,      73.4,     109.9,       6.1);        ( 564308.9, 4192333.9,      69.5,      69.5,       6.1);
    ( 564318.9, 4192333.9,      69.9,      70.8,       6.1);        ( 564328.9, 4192333.9,      70.9,      70.9,       6.1);
    ( 564338.9, 4192333.9,      71.6,      71.6,       6.1);        ( 564348.9, 4192333.9,      72.2,      72.2,       6.1);
    ( 564358.9, 4192333.9,      73.1,      73.1,       6.1);        ( 564368.9, 4192333.9,      73.4,      73.4,       6.1);
    ( 564378.9, 4192333.9,      73.7,      73.7,       6.1);        ( 564388.9, 4192333.9,      73.6,     109.9,       6.1);
    ( 564308.9, 4192343.9,      69.7,      69.7,       6.1);        ( 564318.9, 4192343.9,      70.2,      71.1,       6.1);
    ( 564328.9, 4192343.9,      71.2,      71.2,       6.1);        ( 564338.9, 4192343.9,      71.8,      71.8,       6.1);
    ( 564348.9, 4192343.9,      72.4,      72.4,       6.1);        ( 564358.9, 4192343.9,      73.3,      73.3,       6.1);
    ( 564368.9, 4192343.9,      73.6,      73.6,       6.1);        ( 564378.9, 4192343.9,      73.8,      73.8,       6.1);
    ( 564388.9, 4192343.9,      73.8,     109.9,       6.1);        ( 564308.9, 4192353.9,      70.0,      70.0,       6.1);
    ( 564318.9, 4192353.9,      70.5,      70.5,       6.1);        ( 564328.9, 4192353.9,      71.4,      71.4,       6.1);
    ( 564338.9, 4192353.9,      71.9,      71.9,       6.1);        ( 564348.9, 4192353.9,      72.7,      72.7,       6.1);
    ( 564358.9, 4192353.9,      73.6,      73.6,       6.1);        ( 564368.9, 4192353.9,      73.9,      73.9,       6.1);
    ( 564378.9, 4192353.9,      74.1,      74.1,       6.1);        ( 564388.9, 4192353.9,      74.1,     109.9,       6.1);
    ( 564308.9, 4192363.9,      70.2,      70.2,       6.1);        ( 564318.9, 4192363.9,      70.8,      70.8,       6.1);
    ( 564328.9, 4192363.9,      71.5,      71.5,       6.1);        ( 564338.9, 4192363.9,      72.0,      72.0,       6.1);
    ( 564348.9, 4192363.9,      72.8,      72.8,       6.1);        ( 564358.9, 4192363.9,      73.7,      73.7,       6.1);
    ( 564368.9, 4192363.9,      74.2,      74.2,       6.1);        ( 564378.9, 4192363.9,      74.5,      74.5,       6.1);
    ( 564388.9, 4192363.9,      74.5,     109.9,       6.1);        ( 564308.9, 4192373.9,      70.5,      70.5,       6.1);
    ( 564318.9, 4192373.9,      70.9,      70.9,       6.1);        ( 564328.9, 4192373.9,      71.6,      71.6,       6.1);
    ( 564338.9, 4192373.9,      72.1,      72.1,       6.1);        ( 564348.9, 4192373.9,      72.8,      72.8,       6.1);
    ( 564358.9, 4192373.9,      73.5,      73.5,       6.1);        ( 564368.9, 4192373.9,      74.2,      74.2,       6.1);
    ( 564378.9, 4192373.9,      74.6,      74.6,       6.1);        ( 564388.9, 4192373.9,      74.7,      74.7,       6.1);
    ( 564308.9, 4192383.9,      70.7,      70.7,       6.1);        ( 564318.9, 4192383.9,      71.1,      71.1,       6.1);
    ( 564328.9, 4192383.9,      71.7,      71.7,       6.1);        ( 564338.9, 4192383.9,      72.3,      72.3,       6.1);
    ( 564348.9, 4192383.9,      72.9,      72.9,       6.1);        ( 564358.9, 4192383.9,      73.5,      73.5,       6.1);
    ( 564368.9, 4192383.9,      74.1,      74.1,       6.1);        ( 564378.9, 4192383.9,      74.6,      74.6,       6.1);
    ( 564388.9, 4192383.9,      74.9,      74.9,       6.1);        ( 564308.9, 4192393.9,      70.9,      70.9,       6.1);
    ( 564318.9, 4192393.9,      71.4,      71.4,       6.1);        ( 564328.9, 4192393.9,      72.0,      72.0,       6.1);
    ( 564338.9, 4192393.9,      72.6,      72.6,       6.1);        ( 564348.9, 4192393.9,      73.3,      73.3,       6.1);
    ( 564358.9, 4192393.9,      73.9,      73.9,       6.1);        ( 564368.9, 4192393.9,      74.4,      74.4,       6.1);
    ( 564378.9, 4192393.9,      74.8,      74.8,       6.1);        ( 564388.9, 4192393.9,      75.1,      75.1,       6.1);
    ( 564496.4, 4192334.6,      77.5,     111.0,       6.1);        ( 564506.4, 4192334.6,      77.8,     111.0,       6.1);
```

Model Output
Unit Emission Rates (1 g/s)

```
    ( 564516.4, 4192334.6,      78.9,     111.0,       6.1);         ( 564526.4, 4192334.6,      80.1,     111.0,       6.1);
    ( 564536.4, 4192334.6,      81.4,     111.0,       6.1);         ( 564546.4, 4192334.6,      82.1,     111.0,       6.1);
    ( 564556.4, 4192334.6,      83.7,     111.0,       6.1);         ( 564566.4, 4192334.6,      84.8,     111.0,       6.1);
    ( 564576.4, 4192334.6,      85.5,     111.0,       6.1);         ( 564586.4, 4192334.6,      86.4,     111.0,       6.1);
    ( 564596.4, 4192334.6,      86.9,     111.0,       6.1);         ( 564496.4, 4192344.6,      77.7,     111.0,       6.1);
    ( 564506.4, 4192344.6,      78.0,     111.0,       6.1);         ( 564516.4, 4192344.6,      79.1,     111.0,       6.1);
    ( 564526.4, 4192344.6,      80.5,     111.0,       6.1);         ( 564536.4, 4192344.6,      81.3,     111.0,       6.1);
    ( 564546.4, 4192344.6,      81.5,     111.0,       6.1);         ( 564556.4, 4192344.6,      83.8,     111.0,       6.1);
    ( 564566.4, 4192344.6,      85.2,     111.0,       6.1);         ( 564576.4, 4192344.6,      86.0,     111.0,       6.1);
    ( 564586.4, 4192344.6,      87.0,     111.0,       6.1);         ( 564596.4, 4192344.6,      87.6,     111.0,       6.1);
    ( 564496.4, 4192354.6,      78.0,     111.0,       6.1);         ( 564506.4, 4192354.6,      78.3,     111.0,       6.1);
    ( 564516.4, 4192354.6,      79.4,     111.0,       6.1);         ( 564526.4, 4192354.6,      80.7,     111.0,       6.1);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                          ***       01/19/22
*** AERMET - VERSION  14134 ***   *** Addendum to LRDP                                                    ***       09:28:18
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*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                  *** DISCRETE CARTESIAN RECEPTORS ***
                                  (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                              (METERS)

    ( 564536.4, 4192354.6,      81.2,     111.0,       6.1);         ( 564546.4, 4192354.6,      81.5,     111.0,       6.1);
    ( 564556.4, 4192354.6,      83.9,     111.0,       6.1);         ( 564566.4, 4192354.6,      85.3,     111.0,       6.1);
    ( 564576.4, 4192354.6,      86.2,     111.0,       6.1);         ( 564586.4, 4192354.6,      87.3,     111.0,       6.1);
    ( 564596.4, 4192354.6,      87.8,     111.0,       6.1);         ( 564496.4, 4192364.6,      78.2,     111.0,       6.1);
    ( 564506.4, 4192364.6,      78.5,     111.0,       6.1);         ( 564516.4, 4192364.6,      79.3,     111.0,       6.1);
    ( 564526.4, 4192364.6,      80.3,     111.0,       6.1);         ( 564536.4, 4192364.6,      81.1,     111.0,       6.1);
    ( 564546.4, 4192364.6,      82.1,     111.0,       6.1);         ( 564556.4, 4192364.6,      84.1,     111.0,       6.1);
    ( 564566.4, 4192364.6,      85.2,     111.0,       6.1);         ( 564576.4, 4192364.6,      86.2,     111.0,       6.1);
    ( 564586.4, 4192364.6,      87.2,     111.0,       6.1);         ( 564596.4, 4192364.6,      87.6,     111.0,       6.1);
    ( 564496.4, 4192374.6,      78.4,     111.0,       6.1);         ( 564506.4, 4192374.6,      78.6,     147.9,       6.1);
    ( 564516.4, 4192374.6,      79.1,     148.2,       6.1);         ( 564526.4, 4192374.6,      79.7,     149.8,       6.1);
    ( 564536.4, 4192374.6,      81.0,     148.2,       6.1);         ( 564546.4, 4192374.6,      82.5,     111.0,       6.1);
    ( 564556.4, 4192374.6,      83.9,     111.0,       6.1);         ( 564566.4, 4192374.6,      85.0,     111.0,       6.1);
    ( 564576.4, 4192374.6,      86.0,     111.0,       6.1);         ( 564586.4, 4192374.6,      86.9,     111.0,       6.1);
    ( 564596.4, 4192374.6,      87.2,     111.0,       6.1);         ( 564496.4, 4192384.6,      78.6,     111.0,       6.1);
    ( 564506.4, 4192384.6,      78.9,     148.2,       6.1);         ( 564516.4, 4192384.6,      79.4,     149.2,       6.1);
    ( 564526.4, 4192384.6,      79.8,     150.4,       6.1);         ( 564536.4, 4192384.6,      81.0,     149.8,       6.1);
    ( 564546.4, 4192384.6,      82.5,     148.2,       6.1);         ( 564556.4, 4192384.6,      83.6,     111.0,       6.1);
    ( 564566.4, 4192384.6,      84.5,     111.0,       6.1);         ( 564576.4, 4192384.6,      85.5,     111.0,       6.1);
    ( 564586.4, 4192384.6,      86.4,     111.0,       6.1);         ( 564596.4, 4192384.6,      86.8,     148.2,       6.1);
    ( 564496.4, 4192394.6,      78.8,     111.0,       6.1);         ( 564506.4, 4192394.6,      79.3,     148.2,       6.1);
    ( 564516.4, 4192394.6,      79.9,     148.5,       6.1);         ( 564526.4, 4192394.6,      80.4,     150.4,       6.1);
    ( 564536.4, 4192394.6,      81.2,     150.4,       6.1);         ( 564546.4, 4192394.6,      82.3,     149.8,       6.1);
    ( 564556.4, 4192394.6,      83.2,     149.8,       6.1);         ( 564566.4, 4192394.6,      83.8,     151.0,       6.1);
    ( 564576.4, 4192394.6,      84.8,     150.4,       6.1);         ( 564586.4, 4192394.6,      85.9,     149.2,       6.1);
    ( 564596.4, 4192394.6,      86.4,     151.0,       6.1);         ( 564496.4, 4192404.6,      79.0,     147.9,       6.1);
    ( 564506.4, 4192404.6,      79.4,     148.2,       6.1);         ( 564516.4, 4192404.6,      80.0,     149.8,       6.1);
    ( 564526.4, 4192404.6,      80.5,     151.0,       6.1);         ( 564536.4, 4192404.6,      81.2,     151.0,       6.1);
    ( 564546.4, 4192404.6,      82.0,     151.0,       6.1);         ( 564556.4, 4192404.6,      82.8,     163.8,       6.1);
    ( 564566.4, 4192404.6,      83.3,     163.8,       6.1);         ( 564576.4, 4192404.6,      84.3,     163.8,       6.1);
```

Model Output
Unit Emission Rates (1 g/s)

```
    ( 564586.4, 4192404.6,      85.6,     163.8,       6.1);         ( 564596.4, 4192404.6,      86.1,     163.8,       6.1);
    ( 564496.4, 4192414.6,      79.2,     148.2,       6.1);         ( 564506.4, 4192414.6,      79.6,     149.8,       6.1);
    ( 564516.4, 4192414.6,      80.1,     151.0,       6.1);         ( 564526.4, 4192414.6,      80.6,     151.0,       6.1);
    ( 564536.4, 4192414.6,      81.1,     163.8,       6.1);         ( 564546.4, 4192414.6,      81.8,     163.8,       6.1);
    ( 564556.4, 4192414.6,      82.6,     163.8,       6.1);         ( 564566.4, 4192414.6,      83.4,     163.8,       6.1);
    ( 564576.4, 4192414.6,      84.4,     163.8,       6.1);         ( 564586.4, 4192414.6,      85.3,     163.8,       6.1);
    ( 564596.4, 4192414.6,      86.1,     163.8,       6.1);         ( 564601.6, 4192331.5,      86.9,     111.0,       6.1);
    ( 564611.6, 4192331.5,      87.8,     111.0,       6.1);         ( 564621.6, 4192331.5,      89.8,     111.0,       6.1);
    ( 564631.6, 4192331.5,      91.1,     111.0,       6.1);         ( 564641.6, 4192331.5,      91.9,     111.0,       6.1);
    ( 564651.6, 4192331.5,      92.8,     111.0,       6.1);         ( 564661.6, 4192331.5,      94.7,     111.0,       6.1);
    ( 564671.6, 4192331.5,      96.4,     111.0,       6.1);         ( 564681.6, 4192331.5,      97.8,     111.0,       6.1);
    ( 564691.6, 4192331.5,      99.3,     111.0,       6.1);         ( 564701.6, 4192331.5,     100.3,     111.0,       6.1);
    ( 564601.6, 4192341.5,      87.5,     111.0,       6.1);         ( 564611.6, 4192341.5,      88.1,     111.0,       6.1);
    ( 564621.6, 4192341.5,      90.0,     111.0,       6.1);         ( 564631.6, 4192341.5,      91.5,     111.0,       6.1);
    ( 564641.6, 4192341.5,      92.4,     111.0,       6.1);         ( 564651.6, 4192341.5,      93.5,     111.0,       6.1);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                                ***       01/19/22
*** AERMET - VERSION  14134 ***   *** Addendum to LRDP                                                         ***       09:28:18
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*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                        *** DISCRETE CARTESIAN RECEPTORS ***
                                    (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

    ( 564661.6, 4192341.5,      95.6,     111.0,       6.1);         ( 564671.6, 4192341.5,      97.2,     111.0,       6.1);
    ( 564681.6, 4192341.5,      98.6,     111.0,       6.1);         ( 564691.6, 4192341.5,     100.1,     111.0,       6.1);
    ( 564701.6, 4192341.5,     101.3,     111.0,       6.1);         ( 564601.6, 4192351.5,      87.9,     111.0,       6.1);
    ( 564611.6, 4192351.5,      88.4,     111.0,       6.1);         ( 564621.6, 4192351.5,      90.3,     111.0,       6.1);
    ( 564631.6, 4192351.5,      91.8,     111.0,       6.1);         ( 564641.6, 4192351.5,      92.9,     111.0,       6.1);
    ( 564651.6, 4192351.5,      94.3,     111.0,       6.1);         ( 564661.6, 4192351.5,      96.3,     111.0,       6.1);
    ( 564671.6, 4192351.5,      97.9,     111.0,       6.1);         ( 564681.6, 4192351.5,      99.5,     111.0,       6.1);
    ( 564691.6, 4192351.5,     100.8,     110.8,       6.1);         ( 564701.6, 4192351.5,     102.1,     110.8,       6.1);
    ( 564601.6, 4192361.5,      87.8,     111.0,       6.1);         ( 564611.6, 4192361.5,      88.5,     111.0,       6.1);
    ( 564621.6, 4192361.5,      90.6,     111.0,       6.1);         ( 564631.6, 4192361.5,      92.2,     111.0,       6.1);
    ( 564641.6, 4192361.5,      93.3,     111.0,       6.1);         ( 564651.6, 4192361.5,      94.9,     111.0,       6.1);
    ( 564661.6, 4192361.5,      96.5,     111.0,       6.1);         ( 564671.6, 4192361.5,      98.3,     111.0,       6.1);
    ( 564681.6, 4192361.5,     100.1,     110.8,       6.1);         ( 564691.6, 4192361.5,     101.5,     110.8,       6.1);
    ( 564701.6, 4192361.5,     102.6,     110.8,       6.1);         ( 564601.6, 4192371.5,      87.5,     111.0,       6.1);
    ( 564611.6, 4192371.5,      88.3,     111.0,       6.1);         ( 564621.6, 4192371.5,      90.7,     111.0,       6.1);
    ( 564631.6, 4192371.5,      92.4,     111.0,       6.1);         ( 564641.6, 4192371.5,      93.6,     111.0,       6.1);
    ( 564651.6, 4192371.5,      95.3,     111.0,       6.1);         ( 564661.6, 4192371.5,      96.5,     111.0,       6.1);
    ( 564671.6, 4192371.5,      98.4,     111.0,       6.1);         ( 564681.6, 4192371.5,     100.2,     110.8,       6.1);
    ( 564691.6, 4192371.5,     101.6,     110.8,       6.1);         ( 564701.6, 4192371.5,     102.7,     110.6,       6.1);
    ( 564601.6, 4192381.5,      87.1,     147.9,       6.1);         ( 564611.6, 4192381.5,      88.1,     147.9,       6.1);
    ( 564621.6, 4192381.5,      90.4,     111.0,       6.1);         ( 564631.6, 4192381.5,      92.1,     111.0,       6.1);
    ( 564641.6, 4192381.5,      93.6,     111.0,       6.1);         ( 564651.6, 4192381.5,      95.4,     111.0,       6.1);
    ( 564661.6, 4192381.5,      96.5,     111.0,       6.1);         ( 564671.6, 4192381.5,      98.3,     111.0,       6.1);
    ( 564681.6, 4192381.5,     100.0,     111.0,       6.1);         ( 564691.6, 4192381.5,     101.2,     110.8,       6.1);
    ( 564701.6, 4192381.5,     102.6,     110.8,       6.1);         ( 564601.6, 4192391.5,      86.8,     151.0,       6.1);
    ( 564611.6, 4192391.5,      88.1,     148.2,       6.1);         ( 564621.6, 4192391.5,      90.3,     111.0,       6.1);
    ( 564631.6, 4192391.5,      91.5,     111.0,       6.1);         ( 564641.6, 4192391.5,      92.8,     111.0,       6.1);
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    ( 564651.6, 4192391.5,      95.0,     111.0,       6.1);         ( 564661.6, 4192391.5,      96.5,     111.0,       6.1);
    ( 564671.6, 4192391.5,      98.0,     111.0,       6.1);         ( 564681.6, 4192391.5,      99.6,     111.0,       6.1);
    ( 564691.6, 4192391.5,     101.1,     111.0,       6.1);         ( 564701.6, 4192391.5,     102.2,     110.8,       6.1);
    ( 564601.6, 4192401.5,      86.4,     163.8,       6.1);         ( 564611.6, 4192401.5,      88.1,     151.0,       6.1);
    ( 564621.6, 4192401.5,      90.3,     111.0,       6.1);         ( 564631.6, 4192401.5,      91.0,     111.0,       6.1);
    ( 564641.6, 4192401.5,      91.5,     147.9,       6.1);         ( 564651.6, 4192401.5,      94.6,     111.0,       6.1);
    ( 564661.6, 4192401.5,      96.6,     111.0,       6.1);         ( 564671.6, 4192401.5,      97.8,     111.0,       6.1);
    ( 564681.6, 4192401.5,      99.4,     111.0,       6.1);         ( 564691.6, 4192401.5,     101.0,     111.0,       6.1);
    ( 564701.6, 4192401.5,     101.7,     111.0,       6.1);         ( 564601.6, 4192411.5,      86.5,     163.8,       6.1);
    ( 564611.6, 4192411.5,      88.2,     151.0,       6.1);         ( 564621.6, 4192411.5,      90.2,     148.2,       6.1);
    ( 564631.6, 4192411.5,      91.0,     148.2,       6.1);         ( 564641.6, 4192411.5,      91.9,     148.2,       6.1);
    ( 564651.6, 4192411.5,      95.4,     111.0,       6.1);         ( 564661.6, 4192411.5,      96.9,     111.0,       6.1);
    ( 564671.6, 4192411.5,      97.6,     111.0,       6.1);         ( 564681.6, 4192411.5,      99.1,     111.0,       6.1);
    ( 564691.6, 4192411.5,     100.3,     111.0,       6.1);         ( 564701.6, 4192411.5,     100.7,     111.0,       6.1);
    ( 564601.6, 4192421.5,      87.5,     163.8,       6.1);         ( 564611.6, 4192421.5,      89.3,     149.8,       6.1);
    ( 564621.6, 4192421.5,      90.7,     148.2,       6.1);         ( 564631.6, 4192421.5,      92.0,     111.0,       6.1);
    ( 564641.6, 4192421.5,      93.9,     111.0,       6.1);         ( 564651.6, 4192421.5,      96.4,     111.0,       6.1);
    ( 564661.6, 4192421.5,      97.3,     111.0,       6.1);         ( 564671.6, 4192421.5,      98.0,     111.0,       6.1);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                                ***       01/19/22
*** AERMET - VERSION  14134 ***   *** Addendum to LRDP                                                          ***       09:28:18
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*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                        *** DISCRETE CARTESIAN RECEPTORS ***
                                    (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

    ( 564681.6, 4192421.5,      99.0,     111.0,       6.1);         ( 564691.6, 4192421.5,      99.5,     111.0,       6.1);
    ( 564701.6, 4192421.5,      99.6,     111.0,       6.1);         ( 564723.6, 4192307.8,      99.3,     111.0,       6.1);
    ( 564733.6, 4192307.8,     101.2,     111.0,       6.1);         ( 564743.6, 4192307.8,     101.7,     111.0,       6.1);
    ( 564753.6, 4192307.8,     102.0,     111.0,       6.1);         ( 564763.6, 4192307.8,     102.5,     111.0,       6.1);
    ( 564773.6, 4192307.8,     103.1,     111.0,       6.1);         ( 564783.6, 4192307.8,     103.5,     111.0,       6.1);
    ( 564793.6, 4192307.8,     103.7,     110.8,       6.1);         ( 564803.6, 4192307.8,     104.3,     110.8,       6.1);
    ( 564813.6, 4192307.8,     105.0,     110.8,       6.1);         ( 564823.6, 4192307.8,     105.4,     113.9,       6.1);
    ( 564833.6, 4192307.8,     105.3,     114.3,       6.1);         ( 564843.6, 4192307.8,     106.1,     114.3,       6.1);
    ( 564723.6, 4192317.8,     101.6,     111.0,       6.1);         ( 564733.6, 4192317.8,     103.5,     110.8,       6.1);
    ( 564743.6, 4192317.8,     103.8,     110.8,       6.1);         ( 564753.6, 4192317.8,     104.3,     110.8,       6.1);
    ( 564763.6, 4192317.8,     105.1,     110.8,       6.1);         ( 564773.6, 4192317.8,     105.7,     110.8,       6.1);
    ( 564783.6, 4192317.8,     105.8,     110.8,       6.1);         ( 564793.6, 4192317.8,     106.1,     110.8,       6.1);
    ( 564803.6, 4192317.8,     106.9,     110.8,       6.1);         ( 564813.6, 4192317.8,     107.6,     110.8,       6.1);
    ( 564823.6, 4192317.8,     107.8,     110.8,       6.1);         ( 564833.6, 4192317.8,     107.2,     110.8,       6.1);
    ( 564843.6, 4192317.8,     107.4,     114.0,       6.1);         ( 564723.6, 4192327.8,     103.4,     110.8,       6.1);
    ( 564733.6, 4192327.8,     105.0,     110.7,       6.1);         ( 564743.6, 4192327.8,     106.0,     110.7,       6.1);
    ( 564753.6, 4192327.8,     106.8,     110.7,       6.1);         ( 564763.6, 4192327.8,     107.5,     110.7,       6.1);
    ( 564773.6, 4192327.8,     108.1,     110.7,       6.1);         ( 564783.6, 4192327.8,     108.3,     110.8,       6.1);
    ( 564793.6, 4192327.8,     108.7,     110.7,       6.1);         ( 564803.6, 4192327.8,     109.2,     110.7,       6.1);
    ( 564813.6, 4192327.8,     109.7,     110.3,       6.1);         ( 564823.6, 4192327.8,     109.7,     110.2,       6.1);
    ( 564833.6, 4192327.8,     109.3,     110.8,       6.1);         ( 564843.6, 4192327.8,     109.2,     110.7,       6.1);
    ( 564723.6, 4192337.8,     105.0,     110.5,       6.1);         ( 564733.6, 4192337.8,     106.9,     109.9,       6.1);
    ( 564743.6, 4192337.8,     108.0,     109.6,       6.1);         ( 564753.6, 4192337.8,     108.7,     109.3,       6.1);
    ( 564763.6, 4192337.8,     109.2,     109.7,       6.1);         ( 564773.6, 4192337.8,     109.7,     110.0,       6.1);
```

Model Output
Unit Emission Rates (1 g/s)

```
    ( 564783.6, 4192337.8,     110.0,     110.4,       6.1);         ( 564793.6, 4192337.8,     110.3,     110.3,       6.1);
    ( 564803.6, 4192337.8,     110.4,     110.4,       6.1);         ( 564813.6, 4192337.8,     110.6,     110.6,       6.1);
    ( 564823.6, 4192337.8,     110.6,     110.6,       6.1);         ( 564833.6, 4192337.8,     110.5,     110.5,       6.1);
    ( 564843.6, 4192337.8,     110.3,     110.3,       6.1);         ( 564723.6, 4192347.8,     106.1,     110.1,       6.1);
    ( 564733.6, 4192347.8,     108.1,     109.3,       6.1);         ( 564743.6, 4192347.8,     109.2,     109.2,       6.1);
    ( 564753.6, 4192347.8,     109.5,     109.5,       6.1);         ( 564763.6, 4192347.8,     109.9,     109.9,       6.1);
    ( 564773.6, 4192347.8,     110.3,     110.3,       6.1);         ( 564783.6, 4192347.8,     110.6,     110.6,       6.1);
    ( 564793.6, 4192347.8,     110.7,     110.7,       6.1);         ( 564803.6, 4192347.8,     110.8,     110.8,       6.1);
    ( 564813.6, 4192347.8,     110.7,     110.7,       6.1);         ( 564823.6, 4192347.8,     110.7,     110.7,       6.1);
    ( 564833.6, 4192347.8,     110.7,     110.7,       6.1);         ( 564843.6, 4192347.8,     110.6,     110.6,       6.1);
    ( 564723.6, 4192357.8,     106.3,     110.1,       6.1);         ( 564733.6, 4192357.8,     108.5,     109.6,       6.1);
    ( 564743.6, 4192357.8,     109.6,     109.6,       6.1);         ( 564753.6, 4192357.8,     109.9,     109.9,       6.1);
    ( 564763.6, 4192357.8,     110.2,     110.2,       6.1);         ( 564773.6, 4192357.8,     110.5,     110.5,       6.1);
    ( 564783.6, 4192357.8,     110.8,     110.8,       6.1);         ( 564793.6, 4192357.8,     110.8,     110.8,       6.1);
    ( 564803.6, 4192357.8,     110.8,     110.8,       6.1);         ( 564813.6, 4192357.8,     110.7,     110.7,       6.1);
    ( 564823.6, 4192357.8,     110.7,     110.7,       6.1);         ( 564833.6, 4192357.8,     110.7,     110.7,       6.1);
    ( 564843.6, 4192357.8,     110.6,     110.6,       6.1);         ( 564723.6, 4192367.8,     106.1,     110.1,       6.1);
    ( 564733.6, 4192367.8,     108.4,     109.8,       6.1);         ( 564743.6, 4192367.8,     109.8,     109.8,       6.1);
    ( 564753.6, 4192367.8,     109.9,     109.9,       6.1);         ( 564763.6, 4192367.8,     110.1,     110.1,       6.1);
    ( 564773.6, 4192367.8,     110.5,     110.5,       6.1);         ( 564783.6, 4192367.8,     110.8,     110.8,       6.1);
    ( 564793.6, 4192367.8,     110.8,     110.8,       6.1);         ( 564803.6, 4192367.8,     110.8,     110.8,       6.1);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                          ***        01/19/22
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*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                   *** DISCRETE CARTESIAN RECEPTORS ***
                                (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                             (METERS)

    ( 564813.6, 4192367.8,     110.7,     110.7,       6.1);         ( 564823.6, 4192367.8,     110.8,     110.8,       6.1);
    ( 564833.6, 4192367.8,     110.7,     110.7,       6.1);         ( 564843.6, 4192367.8,     110.3,     110.3,       6.1);
    ( 564723.6, 4192377.8,     105.7,     110.3,       6.1);         ( 564733.6, 4192377.8,     108.5,     109.9,       6.1);
    ( 564743.6, 4192377.8,     109.8,     109.8,       6.1);         ( 564753.6, 4192377.8,     109.7,     109.7,       6.1);
    ( 564763.6, 4192377.8,     109.8,     109.8,       6.1);         ( 564773.6, 4192377.8,     110.3,     110.3,       6.1);
    ( 564783.6, 4192377.8,     110.8,     110.8,       6.1);         ( 564793.6, 4192377.8,     110.9,     110.9,       6.1);
    ( 564803.6, 4192377.8,     110.6,     110.6,       6.1);         ( 564813.6, 4192377.8,     110.5,     110.5,       6.1);
    ( 564823.6, 4192377.8,     110.4,     110.4,       6.1);         ( 564833.6, 4192377.8,     110.2,     110.2,       6.1);
    ( 564843.6, 4192377.8,     109.5,     110.5,       6.1);         ( 564723.6, 4192387.8,     105.5,     110.1,       6.1);
    ( 564733.6, 4192387.8,     108.2,     109.9,       6.1);         ( 564743.6, 4192387.8,     109.4,     109.4,       6.1);
    ( 564753.6, 4192387.8,     109.4,     109.4,       6.1);         ( 564763.6, 4192387.8,     109.6,     109.6,       6.1);
    ( 564773.6, 4192387.8,     109.8,     109.8,       6.1);         ( 564783.6, 4192387.8,     110.5,     110.5,       6.1);
    ( 564793.6, 4192387.8,     110.5,     110.5,       6.1);         ( 564803.6, 4192387.8,     109.7,     110.7,       6.1);
    ( 564813.6, 4192387.8,     109.3,     110.3,       6.1);         ( 564823.6, 4192387.8,     109.3,     110.2,       6.1);
    ( 564833.6, 4192387.8,     109.1,     110.0,       6.1);         ( 564843.6, 4192387.8,     108.4,     110.8,       6.1);
    ( 564723.6, 4192397.8,     104.9,     110.1,       6.1);         ( 564733.6, 4192397.8,     106.9,     109.9,       6.1);
    ( 564743.6, 4192397.8,     107.8,     109.9,       6.1);         ( 564753.6, 4192397.8,     108.4,     109.3,       6.1);
    ( 564763.6, 4192397.8,     108.7,     109.5,       6.1);         ( 564773.6, 4192397.8,     108.4,     111.0,       6.1);
    ( 564783.6, 4192397.8,     109.3,     111.0,       6.1);         ( 564793.6, 4192397.8,     109.4,     111.0,       6.1);
    ( 564803.6, 4192397.8,     108.0,     111.0,       6.1);         ( 564813.6, 4192397.8,     107.3,     111.0,       6.1);
    ( 564823.6, 4192397.8,     107.6,     110.8,       6.1);         ( 564833.6, 4192397.8,     107.8,     110.8,       6.1);
```

Model Output
Unit Emission Rates (1 g/s)

```
    ( 564843.6, 4192397.8,     107.1,     163.8,       6.1);         ( 564723.6, 4192407.8,     103.6,     111.0,       6.1);
    ( 564733.6, 4192407.8,     105.0,     110.8,       6.1);         ( 564743.6, 4192407.8,     105.8,     110.8,       6.1);
    ( 564753.6, 4192407.8,     106.7,     110.8,       6.1);         ( 564763.6, 4192407.8,     107.1,     111.0,       6.1);
    ( 564773.6, 4192407.8,     106.5,     111.0,       6.1);         ( 564783.6, 4192407.8,     107.2,     111.0,       6.1);
    ( 564793.6, 4192407.8,     107.3,     111.0,       6.1);         ( 564803.6, 4192407.8,     106.0,     111.0,       6.1);
    ( 564813.6, 4192407.8,     105.3,     163.8,       6.1);         ( 564823.6, 4192407.8,     105.8,     163.8,       6.1);
    ( 564833.6, 4192407.8,     106.2,     163.8,       6.1);         ( 564843.6, 4192407.8,     105.8,     163.8,       6.1);
    ( 564723.6, 4192417.8,     101.9,     111.0,       6.1);         ( 564733.6, 4192417.8,     103.1,     111.0,       6.1);
    ( 564743.6, 4192417.8,     104.0,     111.0,       6.1);         ( 564753.6, 4192417.8,     104.8,     111.0,       6.1);
    ( 564763.6, 4192417.8,     105.2,     111.0,       6.1);         ( 564773.6, 4192417.8,     104.9,     111.0,       6.1);
    ( 564783.6, 4192417.8,     105.0,     111.0,       6.1);         ( 564793.6, 4192417.8,     104.9,     147.9,       6.1);
    ( 564803.6, 4192417.8,     104.2,     163.8,       6.1);         ( 564813.6, 4192417.8,     103.9,     163.8,       6.1);
    ( 564823.6, 4192417.8,     104.2,     163.8,       6.1);         ( 564833.6, 4192417.8,     104.5,     163.8,       6.1);
    ( 564843.6, 4192417.8,     104.5,     163.8,       6.1);         ( 564723.6, 4192427.8,     100.3,     111.0,       6.1);
    ( 564733.6, 4192427.8,     101.3,     111.0,       6.1);         ( 564743.6, 4192427.8,     102.0,     111.0,       6.1);
    ( 564753.6, 4192427.8,     102.6,     111.0,       6.1);         ( 564763.6, 4192427.8,     102.9,     148.2,       6.1);
    ( 564773.6, 4192427.8,     103.0,     163.8,       6.1);         ( 564783.6, 4192427.8,     102.9,     163.8,       6.1);
    ( 564793.6, 4192427.8,     102.7,     163.8,       6.1);         ( 564803.6, 4192427.8,     102.6,     163.8,       6.1);
    ( 564813.6, 4192427.8,     102.8,     163.8,       6.1);         ( 564823.6, 4192427.8,     103.0,     163.8,       6.1);
    ( 564833.6, 4192427.8,     103.3,     163.8,       6.1);         ( 564843.6, 4192427.8,     103.5,     163.8,       6.1);
    ( 564751.5, 4192259.2,      91.2,     163.8,       6.1);         ( 564761.5, 4192259.2,      92.0,     163.8,       6.1);
    ( 564771.5, 4192259.2,      92.6,     163.8,       6.1);         ( 564781.5, 4192259.2,      93.5,     163.8,       6.1);
    ( 564791.5, 4192259.2,      94.5,     163.8,       6.1);         ( 564801.5, 4192259.2,      95.4,     163.8,       6.1);
    ( 564811.5, 4192259.2,      96.6,     163.8,       6.1);         ( 564821.5, 4192259.2,      98.0,     114.5,       6.1);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                                ***        01/19/22
*** AERMET - VERSION  14134 ***   *** Addendum to LRDP                                                          ***        09:28:18
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*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                        *** DISCRETE CARTESIAN RECEPTORS ***
                                    (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

    ( 564831.5, 4192259.2,      99.4,     114.5,       6.1);         ( 564841.5, 4192259.2,     101.2,     114.5,       6.1);
    ( 564851.5, 4192259.2,     103.6,     114.5,       6.1);         ( 564741.5, 4192269.2,      93.0,     114.5,       6.1);
    ( 564751.5, 4192269.2,      93.1,     114.5,       6.1);         ( 564761.5, 4192269.2,      93.8,     163.8,       6.1);
    ( 564771.5, 4192269.2,      94.5,     163.8,       6.1);         ( 564781.5, 4192269.2,      95.3,     163.8,       6.1);
    ( 564791.5, 4192269.2,      95.9,     163.8,       6.1);         ( 564801.5, 4192269.2,      96.8,     163.8,       6.1);
    ( 564811.5, 4192269.2,      97.7,     163.8,       6.1);         ( 564821.5, 4192269.2,      99.0,     114.5,       6.1);
    ( 564831.5, 4192269.2,     100.3,     114.5,       6.1);         ( 564841.5, 4192269.2,     101.8,     114.5,       6.1);
    ( 564851.5, 4192269.2,     104.2,     114.5,       6.1);         ( 564741.5, 4192279.2,      95.0,     114.5,       6.1);
    ( 564751.5, 4192279.2,      95.4,     114.5,       6.1);         ( 564761.5, 4192279.2,      96.1,     114.5,       6.1);
    ( 564771.5, 4192279.2,      96.8,     114.5,       6.1);         ( 564781.5, 4192279.2,      97.2,     114.5,       6.1);
    ( 564791.5, 4192279.2,      97.7,     114.5,       6.1);         ( 564801.5, 4192279.2,      98.6,     114.5,       6.1);
    ( 564811.5, 4192279.2,      99.1,     114.5,       6.1);         ( 564821.5, 4192279.2,     100.0,     114.5,       6.1);
    ( 564831.5, 4192279.2,     101.2,     114.5,       6.1);         ( 564841.5, 4192279.2,     103.2,     114.5,       6.1);
    ( 564851.5, 4192279.2,     105.4,     114.3,       6.1);         ( 564741.5, 4192289.2,      97.1,     113.5,       6.1);
    ( 564751.5, 4192289.2,      97.8,     113.9,       6.1);         ( 564761.5, 4192289.2,      98.3,     114.2,       6.1);
    ( 564771.5, 4192289.2,      99.2,     114.2,       6.1);         ( 564781.5, 4192289.2,      99.6,     114.3,       6.1);
    ( 564791.5, 4192289.2,      99.9,     114.5,       6.1);         ( 564801.5, 4192289.2,     100.6,     114.5,       6.1);
    ( 564811.5, 4192289.2,     100.9,     114.5,       6.1);         ( 564821.5, 4192289.2,     101.3,     114.5,       6.1);
```

Model Output
Unit Emission Rates (1 g/s)

```
( 564831.5, 4192289.2,     102.4,     114.5,       6.1);        ( 564841.5, 4192289.2,     104.5,     114.5,       6.1);
( 564851.5, 4192289.2,     106.2,     114.3,       6.1);        ( 564741.5, 4192299.2,      99.4,     111.0,       6.1);
( 564751.5, 4192299.2,      99.8,     111.0,       6.1);        ( 564761.5, 4192299.2,     100.1,     111.0,       6.1);
( 564771.5, 4192299.2,     101.0,     111.0,       6.1);        ( 564781.5, 4192299.2,     101.5,     111.0,       6.1);
( 564791.5, 4192299.2,     101.9,     114.0,       6.1);        ( 564801.5, 4192299.2,     102.2,     114.2,       6.1);
( 564811.5, 4192299.2,     102.7,     114.3,       6.1);        ( 564821.5, 4192299.2,     103.2,     114.5,       6.1);
( 564831.5, 4192299.2,     103.7,     114.5,       6.1);        ( 564841.5, 4192299.2,     105.0,     114.5,       6.1);
( 564851.5, 4192299.2,     106.6,     114.3,       6.1);        ( 564803.1, 4192186.8,      87.8,     163.8,       6.1);
( 564813.1, 4192186.8,      89.3,     163.8,       6.1);        ( 564782.5, 4192212.3,      88.1,     163.8,       6.1);
( 564803.1, 4192196.8,      88.9,     163.8,       6.1);        ( 564813.1, 4192196.8,      90.4,     163.8,       6.1);
( 564803.1, 4192206.8,      90.3,     163.8,       6.1);        ( 564813.1, 4192206.8,      91.4,     163.8,       6.1);
( 564803.1, 4192216.8,      91.1,     163.8,       6.1);        ( 564813.1, 4192216.8,      92.1,     163.8,       6.1);
( 564823.1, 4192216.8,      93.2,     163.8,       6.1);        ( 564833.1, 4192216.8,      94.8,     163.8,       6.1);
( 564843.1, 4192216.8,      96.8,     114.5,       6.1);        ( 564853.1, 4192216.8,      98.2,     114.5,       6.1);
( 564863.1, 4192216.8,      99.3,     114.5,       6.1);        ( 564873.1, 4192216.8,      99.9,     114.5,       6.1);
( 564803.1, 4192226.8,      91.9,     163.8,       6.1);        ( 564813.1, 4192226.8,      93.1,     163.8,       6.1);
( 564823.1, 4192226.8,      94.3,     163.8,       6.1);        ( 564833.1, 4192226.8,      95.9,     163.8,       6.1);
( 564843.1, 4192226.8,      98.3,     114.5,       6.1);        ( 564853.1, 4192226.8,     100.2,     114.5,       6.1);
( 564863.1, 4192226.8,     101.0,     114.5,       6.1);        ( 564873.1, 4192226.8,     101.4,     114.5,       6.1);
( 564803.1, 4192236.8,      93.0,     163.8,       6.1);        ( 564813.1, 4192236.8,      94.4,     163.8,       6.1);
( 564823.1, 4192236.8,      95.7,     163.8,       6.1);        ( 564833.1, 4192236.8,      96.9,     163.8,       6.1);
( 564843.1, 4192236.8,      99.4,     114.5,       6.1);        ( 564853.1, 4192236.8,     101.7,     114.5,       6.1);
( 564863.1, 4192236.8,     102.7,     114.5,       6.1);        ( 564873.1, 4192236.8,     103.0,     114.5,       6.1);
( 564803.1, 4192246.8,      94.0,     163.8,       6.1);        ( 564813.1, 4192246.8,      95.5,     163.8,       6.1);
( 564823.1, 4192246.8,      96.9,     163.8,       6.1);        ( 564833.1, 4192246.8,      98.3,     114.5,       6.1);
( 564843.1, 4192246.8,     100.5,     114.5,       6.1);        ( 564853.1, 4192246.8,     102.8,     114.5,       6.1);
( 564863.1, 4192246.8,     104.0,     114.3,       6.1);        ( 564873.1, 4192246.8,     104.4,     114.3,       6.1);
```

Model Output
Unit Emission Rates (1 g/s)

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(564771.2,	4192228.8,	88.5,	163.8,	6.1);	(564781.2,	4192228.8,	89.5,	163.8,	6.1);
(564791.2,	4192228.8,	90.6,	163.8,	6.1);	(564771.2,	4192238.8,	89.5,	163.8,	6.1);
(564781.2,	4192238.8,	90.6,	163.8,	6.1);	(564791.2,	4192238.8,	91.7,	163.8,	6.1);
(564771.2,	4192248.8,	91.0,	163.8,	6.1);	(564781.2,	4192248.8,	91.9,	163.8,	6.1);
(564791.2,	4192248.8,	92.9,	163.8,	6.1);	(564863.3,	4192259.2,	105.4,	114.2,	6.1);
(564893.3,	4192259.2,	109.0,	112.2,	6.1);	(564903.3,	4192259.2,	111.8,	112.2,	6.1);
(564913.3,	4192259.2,	112.2,	112.2,	6.1);	(564923.3,	4192259.2,	111.3,	111.6,	6.1);
(564933.3,	4192259.2,	109.6,	112.2,	6.1);	(564943.3,	4192259.2,	109.2,	111.9,	6.1);
(564953.3,	4192259.2,	109.2,	111.9,	6.1);	(564963.3,	4192259.2,	108.6,	111.9,	6.1);
(564973.3,	4192259.2,	108.1,	111.9,	6.1);	(564983.3,	4192259.2,	107.0,	163.8,	6.1);
(564993.3,	4192259.2,	104.7,	163.8,	6.1);	(565003.3,	4192259.2,	102.0,	163.8,	6.1);
(565013.3,	4192259.2,	99.7,	163.8,	6.1);	(565023.3,	4192259.2,	98.7,	163.8,	6.1);
(565033.3,	4192259.2,	98.4,	163.8,	6.1);	(565043.3,	4192259.2,	98.1,	163.8,	6.1);
(564863.3,	4192269.2,	106.3,	114.1,	6.1);	(564893.3,	4192269.2,	109.8,	112.2,	6.1);
(564903.3,	4192269.2,	112.0,	112.2,	6.1);	(564913.3,	4192269.2,	112.1,	112.1,	6.1);
(564923.3,	4192269.2,	111.1,	111.5,	6.1);	(564933.3,	4192269.2,	109.8,	112.2,	6.1);
(564943.3,	4192269.2,	110.3,	111.9,	6.1);	(564953.3,	4192269.2,	110.6,	111.8,	6.1);
(564963.3,	4192269.2,	109.6,	111.9,	6.1);	(564973.3,	4192269.2,	108.8,	163.8,	6.1);
(564983.3,	4192269.2,	108.0,	163.8,	6.1);	(564993.3,	4192269.2,	105.9,	163.8,	6.1);
(565003.3,	4192269.2,	103.1,	163.8,	6.1);	(565013.3,	4192269.2,	100.9,	163.8,	6.1);
(565023.3,	4192269.2,	100.1,	163.8,	6.1);	(565033.3,	4192269.2,	99.8,	163.8,	6.1);
(565043.3,	4192269.2,	99.1,	163.8,	6.1);	(564863.3,	4192279.2,	107.1,	113.9,	6.1);
(564893.3,	4192279.2,	110.0,	112.2,	6.1);	(564903.3,	4192279.2,	111.3,	111.3,	6.1);
(564913.3,	4192279.2,	112.0,	112.0,	6.1);	(564923.3,	4192279.2,	111.4,	111.7,	6.1);
(564933.3,	4192279.2,	110.5,	112.1,	6.1);	(564943.3,	4192279.2,	111.3,	111.9,	6.1);
(564953.3,	4192279.2,	111.7,	111.7,	6.1);	(564963.3,	4192279.2,	110.5,	111.8,	6.1);
(564973.3,	4192279.2,	109.5,	163.8,	6.1);	(564983.3,	4192279.2,	108.7,	163.8,	6.1);
(564993.3,	4192279.2,	106.5,	163.8,	6.1);	(565003.3,	4192279.2,	103.8,	163.8,	6.1);
(565013.3,	4192279.2,	102.3,	163.8,	6.1);	(565023.3,	4192279.2,	101.9,	163.8,	6.1);
(565033.3,	4192279.2,	101.5,	163.8,	6.1);	(565043.3,	4192279.2,	100.4,	163.8,	6.1);
(564863.3,	4192289.2,	107.6,	114.2,	6.1);	(564893.3,	4192289.2,	110.7,	111.1,	6.1);
(564903.3,	4192289.2,	111.3,	111.3,	6.1);	(564913.3,	4192289.2,	112.0,	112.0,	6.1);
(564923.3,	4192289.2,	111.9,	111.9,	6.1);	(564933.3,	4192289.2,	111.5,	111.5,	6.1);
(564943.3,	4192289.2,	111.9,	111.9,	6.1);	(564953.3,	4192289.2,	111.8,	111.8,	6.1);
(564963.3,	4192289.2,	110.8,	111.8,	6.1);	(564973.3,	4192289.2,	109.7,	163.8,	6.1);
(564983.3,	4192289.2,	109.0,	163.8,	6.1);	(564993.3,	4192289.2,	107.2,	163.8,	6.1);
(565003.3,	4192289.2,	105.0,	163.8,	6.1);	(565013.3,	4192289.2,	103.8,	163.8,	6.1);
(565023.3,	4192289.2,	103.2,	163.8,	6.1);	(565033.3,	4192289.2,	102.6,	163.8,	6.1);
(565043.3,	4192289.2,	101.3,	163.8,	6.1);	(564863.3,	4192299.2,	108.2,	114.2,	6.1);
(564893.3,	4192299.2,	111.5,	111.5,	6.1);	(564903.3,	4192299.2,	111.8,	111.8,	6.1);
(564913.3,	4192299.2,	112.0,	112.0,	6.1);	(564923.3,	4192299.2,	112.1,	112.1,	6.1);
(564933.3,	4192299.2,	112.1,	113.4,	6.1);	(564943.3,	4192299.2,	112.0,	114.3,	6.1);

(564953.3, 4192299.2, 111.3, 114.3, 6.1); (564963.3, 4192299.2, 110.4, 163.8, 6.1);
(564973.3, 4192299.2, 109.5, 163.8, 6.1); (564983.3, 4192299.2, 108.7, 163.8, 6.1);
(564993.3, 4192299.2, 107.5, 163.8, 6.1); (565003.3, 4192299.2, 106.0, 163.8, 6.1);

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(565013.3, 4192299.2, 105.0, 163.8, 6.1); (565023.3, 4192299.2, 104.1, 163.8, 6.1);
(565033.3, 4192299.2, 103.2, 163.8, 6.1); (564863.3, 4192309.2, 108.8, 113.9, 6.1);
(564893.3, 4192309.2, 111.3, 113.9, 6.1); (564903.3, 4192309.2, 111.7, 114.2, 6.1);
(564913.3, 4192309.2, 112.4, 114.1, 6.1); (564923.3, 4192309.2, 112.9, 114.3, 6.1);
(564933.3, 4192309.2, 113.2, 113.2, 6.1); (564943.3, 4192309.2, 112.8, 114.3, 6.1);
(564953.3, 4192309.2, 111.9, 114.3, 6.1); (564963.3, 4192309.2, 110.7, 163.8, 6.1);
(564973.3, 4192309.2, 109.4, 163.8, 6.1); (564983.3, 4192309.2, 108.4, 163.8, 6.1);
(564993.3, 4192309.2, 107.5, 163.8, 6.1); (565003.3, 4192309.2, 106.5, 163.8, 6.1);
(565013.3, 4192309.2, 105.5, 163.8, 6.1); (565023.3, 4192309.2, 104.6, 163.8, 6.1);
(565033.3, 4192309.2, 103.7, 163.8, 6.1); (564863.3, 4192319.2, 109.3, 113.9, 6.1);
(564893.3, 4192319.2, 111.3, 114.3, 6.1); (564903.3, 4192319.2, 112.5, 114.2, 6.1);
(564913.3, 4192319.2, 113.5, 113.7, 6.1); (564923.3, 4192319.2, 114.0, 114.0, 6.1);
(564933.3, 4192319.2, 114.1, 114.1, 6.1); (564943.3, 4192319.2, 113.8, 113.8, 6.1);
(564953.3, 4192319.2, 113.0, 113.9, 6.1); (564963.3, 4192319.2, 111.3, 163.8, 6.1);
(564973.3, 4192319.2, 109.4, 163.8, 6.1); (564983.3, 4192319.2, 108.5, 163.8, 6.1);
(564993.3, 4192319.2, 107.6, 163.8, 6.1); (565003.3, 4192319.2, 106.6, 163.8, 6.1);
(565013.3, 4192319.2, 105.7, 163.8, 6.1); (565023.3, 4192319.2, 105.0, 163.8, 6.1);
(565033.3, 4192319.2, 104.1, 163.8, 6.1); (564883.3, 4192329.2, 110.8, 114.2, 6.1);
(564893.3, 4192329.2, 112.2, 114.0, 6.1); (564903.3, 4192329.2, 113.5, 113.9, 6.1);
(564913.3, 4192329.2, 114.1, 114.1, 6.1); (564923.3, 4192329.2, 114.3, 114.3, 6.1);
(564933.3, 4192329.2, 114.4, 114.4, 6.1); (564943.3, 4192329.2, 114.1, 114.1, 6.1);
(564953.3, 4192329.2, 113.3, 113.3, 6.1); (564963.3, 4192329.2, 111.3, 163.8, 6.1);
(564973.3, 4192329.2, 109.3, 163.8, 6.1); (564983.3, 4192329.2, 108.5, 163.8, 6.1);
(564993.3, 4192329.2, 107.6, 163.8, 6.1); (565003.3, 4192329.2, 106.7, 163.8, 6.1);
(565013.3, 4192329.2, 105.9, 163.8, 6.1); (565023.3, 4192329.2, 105.4, 163.8, 6.1);
(565033.3, 4192329.2, 104.8, 163.8, 6.1); (564883.3, 4192339.2, 111.5, 114.0, 6.1);
(564893.3, 4192339.2, 113.0, 113.5, 6.1); (564903.3, 4192339.2, 113.9, 113.9, 6.1);
(564913.3, 4192339.2, 114.2, 114.2, 6.1); (564923.3, 4192339.2, 114.3, 114.3, 6.1);
(564933.3, 4192339.2, 114.4, 114.4, 6.1); (564943.3, 4192339.2, 113.9, 113.9, 6.1);
(564953.3, 4192339.2, 113.1, 113.1, 6.1); (564963.3, 4192339.2, 111.0, 163.8, 6.1);
(564973.3, 4192339.2, 109.2, 163.8, 6.1); (564983.3, 4192339.2, 108.4, 163.8, 6.1);
(564993.3, 4192339.2, 107.5, 163.8, 6.1); (565003.3, 4192339.2, 106.6, 163.8, 6.1);
(565013.3, 4192339.2, 106.1, 163.8, 6.1); (565023.3, 4192339.2, 105.7, 163.8, 6.1);
(565033.3, 4192339.2, 105.2, 163.8, 6.1); (564883.3, 4192349.2, 111.4, 114.0, 6.1);
(564893.3, 4192349.2, 112.9, 112.9, 6.1); (564903.3, 4192349.2, 113.7, 113.7, 6.1);
(564913.3, 4192349.2, 114.0, 114.0, 6.1); (564923.3, 4192349.2, 114.0, 114.0, 6.1);
(564933.3, 4192349.2, 113.5, 114.4, 6.1); (564943.3, 4192349.2, 112.6, 163.8, 6.1);
(564953.3, 4192349.2, 112.1, 163.8, 6.1); (564963.3, 4192349.2, 110.4, 163.8, 6.1);
(564973.3, 4192349.2, 109.0, 163.8, 6.1); (564983.3, 4192349.2, 108.0, 163.8, 6.1);

(564993.3, 4192349.2, 107.2, 163.8, 6.1); (565003.3, 4192349.2, 106.5, 163.8, 6.1);
(565013.3, 4192349.2, 106.2, 163.8, 6.1); (565023.3, 4192349.2, 106.0, 163.8, 6.1);
(565033.3, 4192349.2, 105.5, 163.8, 6.1); (564883.3, 4192359.2, 110.7, 114.1, 6.1);
(564893.3, 4192359.2, 112.0, 113.7, 6.1); (564903.3, 4192359.2, 113.0, 113.0, 6.1);
(564913.3, 4192359.2, 113.2, 113.2, 6.1); (564923.3, 4192359.2, 112.5, 114.4, 6.1);
(564933.3, 4192359.2, 111.0, 163.8, 6.1); (564943.3, 4192359.2, 109.8, 163.8, 6.1);

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(564953.3, 4192359.2, 109.8, 163.8, 6.1); (564963.3, 4192359.2, 108.8, 163.8, 6.1);
(564973.3, 4192359.2, 108.0, 163.8, 6.1); (564983.3, 4192359.2, 107.3, 163.8, 6.1);
(564993.3, 4192359.2, 106.7, 163.8, 6.1); (565003.3, 4192359.2, 106.5, 163.8, 6.1);
(565013.3, 4192359.2, 106.4, 163.8, 6.1); (565023.3, 4192359.2, 106.3, 163.8, 6.1);
(564883.3, 4192369.2, 110.1, 114.1, 6.1); (564893.3, 4192369.2, 110.7, 114.1, 6.1);
(564903.3, 4192369.2, 111.7, 113.9, 6.1); (564913.3, 4192369.2, 111.3, 163.8, 6.1);
(564923.3, 4192369.2, 109.6, 163.8, 6.1); (564933.3, 4192369.2, 108.1, 163.8, 6.1);
(564943.3, 4192369.2, 107.3, 163.8, 6.1); (564953.3, 4192369.2, 107.3, 163.8, 6.1);
(564963.3, 4192369.2, 107.0, 163.8, 6.1); (564973.3, 4192369.2, 106.8, 163.8, 6.1);
(564983.3, 4192369.2, 106.5, 163.8, 6.1); (564993.3, 4192369.2, 106.4, 163.8, 6.1);
(565003.3, 4192369.2, 106.5, 163.8, 6.1); (565013.3, 4192369.2, 106.6, 163.8, 6.1);
(565023.3, 4192369.2, 106.4, 163.8, 6.1); (564863.3, 4192379.2, 108.7, 113.7, 6.1);
(564873.3, 4192379.2, 109.3, 163.8, 6.1); (564883.3, 4192379.2, 109.6, 163.8, 6.1);
(564893.3, 4192379.2, 109.7, 163.8, 6.1); (564903.3, 4192379.2, 110.0, 163.8, 6.1);
(564913.3, 4192379.2, 109.2, 163.8, 6.1); (564923.3, 4192379.2, 107.5, 163.8, 6.1);
(564933.3, 4192379.2, 106.6, 163.8, 6.1); (564943.3, 4192379.2, 106.3, 163.8, 6.1);
(564953.3, 4192379.2, 106.3, 163.8, 6.1); (564963.3, 4192379.2, 106.3, 163.8, 6.1);
(564973.3, 4192379.2, 106.3, 163.8, 6.1); (564983.3, 4192379.2, 106.2, 163.8, 6.1);
(564993.3, 4192379.2, 106.2, 163.8, 6.1); (565003.3, 4192379.2, 106.5, 163.8, 6.1);
(565013.3, 4192379.2, 106.9, 163.8, 6.1); (565023.3, 4192379.2, 106.7, 163.8, 6.1);
(564863.3, 4192389.2, 107.8, 163.8, 6.1); (564873.3, 4192389.2, 108.6, 163.8, 6.1);
(564883.3, 4192389.2, 109.1, 163.8, 6.1); (564893.3, 4192389.2, 109.0, 163.8, 6.1);
(564903.3, 4192389.2, 108.8, 163.8, 6.1); (564913.3, 4192389.2, 108.1, 163.8, 6.1);
(564923.3, 4192389.2, 107.1, 163.8, 6.1); (564933.3, 4192389.2, 106.6, 163.8, 6.1);
(564943.3, 4192389.2, 106.4, 163.8, 6.1); (564953.3, 4192389.2, 106.4, 163.8, 6.1);
(564963.3, 4192389.2, 106.4, 163.8, 6.1); (564973.3, 4192389.2, 106.3, 163.8, 6.1);
(564983.3, 4192389.2, 106.3, 163.8, 6.1); (564993.3, 4192389.2, 106.2, 163.8, 6.1);
(565003.3, 4192389.2, 106.7, 163.8, 6.1); (565013.3, 4192389.2, 107.2, 163.8, 6.1);
(565023.3, 4192389.2, 107.1, 163.8, 6.1); (564863.3, 4192399.2, 106.9, 163.8, 6.1);
(564873.3, 4192399.2, 107.7, 163.8, 6.1); (564883.3, 4192399.2, 108.3, 163.8, 6.1);
(564893.3, 4192399.2, 108.3, 163.8, 6.1); (564903.3, 4192399.2, 108.1, 163.8, 6.1);
(564913.3, 4192399.2, 107.8, 163.8, 6.1); (564923.3, 4192399.2, 107.3, 163.8, 6.1);
(564933.3, 4192399.2, 106.9, 163.8, 6.1); (564943.3, 4192399.2, 106.8, 163.8, 6.1);
(564953.3, 4192399.2, 106.8, 163.8, 6.1); (564963.3, 4192399.2, 106.8, 163.8, 6.1);
(564973.3, 4192399.2, 106.8, 163.8, 6.1); (564983.3, 4192399.2, 106.8, 163.8, 6.1);
(564993.3, 4192399.2, 106.8, 163.8, 6.1); (565003.3, 4192399.2, 107.2, 163.8, 6.1);

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    ( 565013.3, 4192399.2,     107.7,     163.8,       6.1);         ( 565023.3, 4192399.2,     107.7,     163.8,       6.1);
    ( 564863.3, 4192409.2,     105.9,     163.8,       6.1);         ( 564873.3, 4192409.2,     106.5,     163.8,       6.1);
    ( 564883.3, 4192409.2,     107.4,     163.8,       6.1);         ( 564893.3, 4192409.2,     107.4,     163.8,       6.1);
    ( 564903.3, 4192409.2,     107.3,     163.8,       6.1);         ( 564913.3, 4192409.2,     107.4,     163.8,       6.1);
    ( 564923.3, 4192409.2,     107.2,     163.8,       6.1);         ( 564933.3, 4192409.2,     106.8,     163.8,       6.1);
    ( 564943.3, 4192409.2,     106.9,     163.8,       6.1);         ( 564953.3, 4192409.2,     107.2,     163.8,       6.1);
    ( 564963.3, 4192409.2,     107.3,     163.8,       6.1);         ( 564973.3, 4192409.2,     107.4,     163.8,       6.1);
    ( 564983.3, 4192409.2,     107.5,     163.8,       6.1);         ( 564993.3, 4192409.2,     107.6,     163.8,       6.1);
    ( 565003.3, 4192409.2,     107.9,     163.8,       6.1);         ( 565013.3, 4192409.2,     108.1,     163.8,       6.1);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                                ***        01/19/22
*** AERMET - VERSION  14134 ***   *** Addendum to LRDP                                                          ***        09:28:18
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*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                        *** DISCRETE CARTESIAN RECEPTORS ***
                                    (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

    ( 565023.3, 4192409.2,     108.2,     163.8,       6.1);         ( 564863.3, 4192419.2,     104.9,     163.8,       6.1);
    ( 564873.3, 4192419.2,     105.4,     163.8,       6.1);         ( 564883.3, 4192419.2,     106.5,     163.8,       6.1);
    ( 564893.3, 4192419.2,     106.5,     163.8,       6.1);         ( 564903.3, 4192419.2,     106.2,     163.8,       6.1);
    ( 564913.3, 4192419.2,     106.5,     163.8,       6.1);         ( 564923.3, 4192419.2,     106.5,     163.8,       6.1);
    ( 564933.3, 4192419.2,     106.3,     163.8,       6.1);         ( 564943.3, 4192419.2,     106.7,     163.8,       6.1);
    ( 564953.3, 4192419.2,     107.5,     163.8,       6.1);         ( 564963.3, 4192419.2,     107.8,     163.8,       6.1);
    ( 564973.3, 4192419.2,     107.8,     163.8,       6.1);         ( 564983.3, 4192419.2,     107.9,     163.8,       6.1);
    ( 564993.3, 4192419.2,     108.1,     163.8,       6.1);         ( 565003.3, 4192419.2,     108.3,     163.8,       6.1);
    ( 565013.3, 4192419.2,     108.4,     163.8,       6.1);         ( 564892.7, 4192239.8,     104.4,     114.5,       6.1);
    ( 564902.7, 4192239.8,     107.1,     112.2,       6.1);         ( 564912.7, 4192239.8,     107.4,     112.2,       6.1);
    ( 564863.3, 4192429.2,     104.0,     163.8,       6.1);         ( 564873.3, 4192429.2,     104.5,     163.8,       6.1);
    ( 564883.3, 4192429.2,     105.3,     163.8,       6.1);         ( 564893.3, 4192429.2,     105.3,     163.8,       6.1);
    ( 564903.3, 4192429.2,     105.4,     163.8,       6.1);         ( 564913.3, 4192429.2,     105.6,     163.8,       6.1);
    ( 564923.3, 4192429.2,     105.7,     163.8,       6.1);         ( 564933.3, 4192429.2,     106.0,     163.8,       6.1);
    ( 564943.3, 4192429.2,     106.7,     163.8,       6.1);         ( 564953.3, 4192429.2,     107.6,     163.8,       6.1);
    ( 564963.3, 4192429.2,     108.0,     163.8,       6.1);         ( 564973.3, 4192429.2,     108.0,     163.8,       6.1);
    ( 564983.3, 4192429.2,     108.1,     163.8,       6.1);         ( 564993.3, 4192429.2,     108.3,     163.8,       6.1);
    ( 565003.3, 4192429.2,     108.7,     163.8,       6.1);         ( 565013.3, 4192429.2,     108.8,     163.8,       6.1);
    ( 564892.7, 4192249.8,     106.9,     112.2,       6.1);         ( 564902.7, 4192249.8,     110.8,     112.2,       6.1);
    ( 564912.7, 4192249.8,     111.5,     111.5,       6.1);         ( 564478.2, 4191929.6,      61.4,      61.4,       1.5);
    ( 564488.2, 4191929.6,      61.6,      61.6,       1.5);         ( 564498.2, 4191929.6,      61.8,      61.8,       1.5);
    ( 564508.2, 4191929.6,      62.3,      63.6,       1.5);         ( 564518.2, 4191929.6,      63.0,      63.0,       1.5);
    ( 564478.2, 4191939.6,      61.7,      61.7,       1.5);         ( 564488.2, 4191939.6,      61.8,      61.8,       1.5);
    ( 564498.2, 4191939.6,      62.0,      62.0,       1.5);         ( 564508.2, 4191939.6,      62.9,      62.9,       1.5);
    ( 564518.2, 4191939.6,      63.7,      63.7,       1.5);         ( 564478.2, 4191949.6,      62.0,      62.0,       1.5);
    ( 564488.2, 4191949.6,      62.0,      62.0,       1.5);         ( 564498.2, 4191949.6,      62.3,     109.3,       1.5);
    ( 564508.2, 4191949.6,      63.3,      64.5,       1.5);         ( 564518.2, 4191949.6,      64.1,      64.1,       1.5);
    ( 564478.2, 4191959.6,      62.3,      62.3,       1.5);         ( 564488.2, 4191959.6,      62.5,     109.7,       1.5);
    ( 564498.2, 4191959.6,      63.0,     110.0,       1.5);         ( 564508.2, 4191959.6,      63.9,      63.9,       1.5);
    ( 564518.2, 4191959.6,      64.5,      64.5,       1.5);         ( 564478.2, 4191969.6,      62.8,     109.6,       1.5);
    ( 564488.2, 4191969.6,      63.2,     110.0,       1.5);         ( 564498.2, 4191969.6,      63.9,     109.7,       1.5);
    ( 564508.2, 4191969.6,      64.7,      64.7,       1.5);         ( 564518.2, 4191969.6,      64.9,     110.0,       1.5);
    ( 564478.2, 4191979.6,      63.2,     110.4,       1.5);         ( 564488.2, 4191979.6,      63.7,     110.4,       1.5);
```

Model Output
Unit Emission Rates (1 g/s)

```
    ( 564498.2, 4191979.6,      64.5,     110.0,       1.5);         ( 564508.2, 4191979.6,      65.2,     110.0,       1.5);
    ( 564518.2, 4191979.6,      65.3,     110.6,       1.5);         ( 564478.2, 4191989.6,      63.4,     110.7,       1.5);
    ( 564488.2, 4191989.6,      63.9,     110.7,       1.5);         ( 564498.2, 4191989.6,      64.7,     110.7,       1.5);
    ( 564508.2, 4191989.6,      65.4,     110.6,       1.5);         ( 564518.2, 4191989.6,      65.5,     110.8,       1.5);
    ( 564478.2, 4191999.6,      63.8,     110.8,       1.5);         ( 564488.2, 4191999.6,      64.2,     110.8,       1.5);
    ( 564498.2, 4191999.6,      64.8,     110.8,       1.5);         ( 564508.2, 4191999.6,      65.4,     110.8,       1.5);
    ( 564518.2, 4191999.6,      65.7,     110.8,       1.5);         ( 564478.2, 4191929.6,      61.4,      61.4,       6.1);
    ( 564488.2, 4191929.6,      61.6,      61.6,       6.1);         ( 564498.2, 4191929.6,      61.8,      61.8,       6.1);
    ( 564508.2, 4191929.6,      62.3,      63.6,       6.1);         ( 564518.2, 4191929.6,      63.0,      63.0,       6.1);
    ( 564478.2, 4191939.6,      61.7,      61.7,       6.1);         ( 564488.2, 4191939.6,      61.8,      61.8,       6.1);
    ( 564498.2, 4191939.6,      62.0,      62.0,       6.1);         ( 564508.2, 4191939.6,      62.9,      62.9,       6.1);
    ( 564518.2, 4191939.6,      63.7,      63.7,       6.1);         ( 564478.2, 4191949.6,      62.0,      62.0,       6.1);
*** AERMOD - VERSION 21112  ***   *** UC Berkeley, The Gateway, Construction HRA                                ***        01/19/22
*** AERMET - VERSION  14134 ***   *** Addendum to LRDP                                                          ***        09:28:18
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*** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN

                                        *** DISCRETE CARTESIAN RECEPTORS ***
                                    (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                (METERS)

    ( 564488.2, 4191949.6,      62.0,      62.0,       6.1);         ( 564498.2, 4191949.6,      62.3,     109.3,       6.1);
    ( 564508.2, 4191949.6,      63.3,      64.5,       6.1);         ( 564518.2, 4191949.6,      64.1,      64.1,       6.1);
    ( 564478.2, 4191959.6,      62.3,      62.3,       6.1);         ( 564488.2, 4191959.6,      62.5,     109.7,       6.1);
    ( 564498.2, 4191959.6,      63.0,     110.0,       6.1);         ( 564508.2, 4191959.6,      63.9,      63.9,       6.1);
    ( 564518.2, 4191959.6,      64.5,      64.5,       6.1);         ( 564478.2, 4191969.6,      62.8,     109.6,       6.1);
    ( 564488.2, 4191969.6,      63.2,     110.0,       6.1);         ( 564498.2, 4191969.6,      63.9,     109.7,       6.1);
    ( 564508.2, 4191969.6,      64.7,      64.7,       6.1);         ( 564518.2, 4191969.6,      64.9,     110.0,       6.1);
    ( 564478.2, 4191979.6,      63.2,     110.4,       6.1);         ( 564488.2, 4191979.6,      63.7,     110.4,       6.1);
    ( 564498.2, 4191979.6,      64.5,     110.0,       6.1);         ( 564508.2, 4191979.6,      65.2,     110.0,       6.1);
    ( 564518.2, 4191979.6,      65.3,     110.6,       6.1);         ( 564478.2, 4191989.6,      63.4,     110.7,       6.1);
    ( 564488.2, 4191989.6,      63.9,     110.7,       6.1);         ( 564498.2, 4191989.6,      64.7,     110.7,       6.1);
    ( 564508.2, 4191989.6,      65.4,     110.6,       6.1);         ( 564518.2, 4191989.6,      65.5,     110.8,       6.1);
    ( 564478.2, 4191999.6,      63.8,     110.8,       6.1);         ( 564488.2, 4191999.6,      64.2,     110.8,       6.1);
    ( 564498.2, 4191999.6,      64.8,     110.8,       6.1);         ( 564508.2, 4191999.6,      65.4,     110.8,       6.1);
    ( 564518.2, 4191999.6,      65.7,     110.8,       6.1);         ( 564478.2, 4191929.6,      61.4,      61.4,      12.2);
    ( 564488.2, 4191929.6,      61.6,      61.6,      12.2);         ( 564498.2, 4191929.6,      61.8,      61.8,      12.2);
    ( 564508.2, 4191929.6,      62.3,      63.6,      12.2);         ( 564518.2, 4191929.6,      63.0,      63.0,      12.2);
    ( 564478.2, 4191939.6,      61.7,      61.7,      12.2);         ( 564488.2, 4191939.6,      61.8,      61.8,      12.2);
    ( 564498.2, 4191939.6,      62.0,      62.0,      12.2);         ( 564508.2, 4191939.6,      62.9,      62.9,      12.2);
    ( 564518.2, 4191939.6,      63.7,      63.7,      12.2);         ( 564478.2, 4191949.6,      62.0,      62.0,      12.2);
    ( 564488.2, 4191949.6,      62.0,      62.0,      12.2);         ( 564498.2, 4191949.6,      62.3,     109.3,      12.2);
    ( 564508.2, 4191949.6,      63.3,      64.5,      12.2);         ( 564518.2, 4191949.6,      64.1,      64.1,      12.2);
    ( 564478.2, 4191959.6,      62.3,      62.3,      12.2);         ( 564488.2, 4191959.6,      62.5,     109.7,      12.2);
    ( 564498.2, 4191959.6,      63.0,     110.0,      12.2);         ( 564508.2, 4191959.6,      63.9,      63.9,      12.2);
    ( 564518.2, 4191959.6,      64.5,      64.5,      12.2);         ( 564478.2, 4191969.6,      62.8,     109.6,      12.2);
    ( 564488.2, 4191969.6,      63.2,     110.0,      12.2);         ( 564498.2, 4191969.6,      63.9,     109.7,      12.2);
    ( 564508.2, 4191969.6,      64.7,      64.7,      12.2);         ( 564518.2, 4191969.6,      64.9,     110.0,      12.2);
    ( 564478.2, 4191979.6,      63.2,     110.4,      12.2);         ( 564488.2, 4191979.6,      63.7,     110.4,      12.2);
    ( 564498.2, 4191979.6,      64.5,     110.0,      12.2);         ( 564508.2, 4191979.6,      65.2,     110.0,      12.2);
    ( 564518.2, 4191979.6,      65.3,     110.6,      12.2);         ( 564478.2, 4191989.6,      63.4,     110.7,      12.2);
```

Model Output
Unit Emission Rates (1 g/s)

```
( 564488.2, 4191989.6,      63.9,     110.7,      12.2);        ( 564498.2, 4191989.6,      64.7,     110.7,      12.2);
( 564508.2, 4191989.6,      65.4,     110.6,      12.2);        ( 564518.2, 4191989.6,      65.5,     110.8,      12.2);
( 564478.2, 4191999.6,      63.8,     110.8,      12.2);        ( 564488.2, 4191999.6,      64.2,     110.8,      12.2);
( 564498.2, 4191999.6,      64.8,     110.8,      12.2);        ( 564508.2, 4191999.6,      65.4,     110.8,      12.2);
( 564518.2, 4191999.6,      65.7,     110.8,      12.2);
```

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

Model Output
Unit Emission Rates (1 g/s)

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: ..\!Met_Data\Oakland_1.8m\724930.SFC Met Version: 14134
Profile file: ..\!Met_Data\Oakland_1.8m\724930.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 23230 Upper air station no.: 23230
Name: OAKLAND/WSO_AP Name: OAKLAND/WSO_AP
Year: 2009 Year: 2009

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
09	01	01	1	01	-17.2	0.303	-9.000	-9.000	-999.	401.	147.2	0.63	0.86	1.00	2.36	81.	10.0	282.5	2.0
09	01	01	1	02	-21.8	0.383	-9.000	-9.000	-999.	569.	234.6	0.63	0.86	1.00	2.86	68.	10.0	282.0	2.0
09	01	01	1	03	-26.3	0.460	-9.000	-9.000	-999.	749.	337.1	0.63	0.86	1.00	3.36	84.	10.0	280.9	2.0
09	01	01	1	04	-15.4	0.270	-9.000	-9.000	-999.	368.	116.1	0.47	0.86	1.00	2.36	53.	10.0	280.9	2.0
09	01	01	1	05	-26.3	0.460	-9.000	-9.000	-999.	749.	336.3	0.63	0.86	1.00	3.36	73.	10.0	280.4	2.0
09	01	01	1	06	-21.9	0.383	-9.000	-9.000	-999.	573.	232.9	0.63	0.86	1.00	2.86	82.	10.0	280.4	2.0
09	01	01	1	07	-22.0	0.383	-9.000	-9.000	-999.	569.	232.5	0.63	0.86	1.00	2.86	95.	10.0	279.9	2.0
09	01	01	1	08	-11.2	0.196	-9.000	-9.000	-999.	238.	60.6	0.63	0.86	0.76	1.76	73.	10.0	279.9	2.0
09	01	01	1	09	-2.2	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.45	0.86	0.39	0.00	0.	10.0	280.4	2.0
09	01	01	1	10	6.8	0.266	0.264	0.016	98.	329.	-250.8	0.63	0.86	0.27	1.76	91.	10.0	280.9	2.0
09	01	01	1	11	15.5	-9.000	-9.000	-9.000	177.	-999.	-99999.0	0.45	0.86	0.22	0.00	0.	10.0	282.0	2.0
09	01	01	1	12	96.1	0.393	1.019	0.014	401.	591.	-57.4	0.22	0.86	0.21	3.36	266.	10.0	281.4	2.0
09	01	01	1	13	102.5	0.395	1.092	0.014	462.	595.	-54.4	0.22	0.86	0.20	3.36	283.	10.0	282.0	2.0
09	01	01	1	14	89.9	0.297	1.066	0.015	489.	394.	-26.5	0.22	0.86	0.21	2.36	249.	10.0	282.0	2.0
09	01	01	1	15	62.1	0.383	0.954	0.014	507.	569.	-82.1	0.22	0.86	0.24	3.36	242.	10.0	282.5	2.0
09	01	01	1	16	23.1	0.665	0.690	0.006	513.	1300.	-1150.4	0.52	0.86	0.33	4.86	304.	10.0	282.5	2.0
09	01	01	1	17	-37.0	0.486	-9.000	-9.000	-999.	846.	280.6	0.22	0.86	0.56	4.86	291.	10.0	281.4	2.0
09	01	01	1	18	-52.2	0.480	-9.000	-9.000	-999.	799.	191.9	0.52	0.86	1.00	3.86	307.	10.0	280.9	2.0
09	01	01	1	19	-25.6	0.224	-9.000	-9.000	-999.	327.	39.8	0.52	0.86	1.00	2.36	334.	10.0	280.4	2.0
09	01	01	1	20	-11.1	0.119	-9.000	-9.000	-999.	115.	13.8	0.52	0.86	1.00	1.76	317.	10.0	280.4	2.0
09	01	01	1	21	-10.3	0.119	-9.000	-9.000	-999.	98.	14.7	0.52	0.86	1.00	1.76	320.	10.0	280.4	2.0
09	01	01	1	22	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.45	0.86	1.00	0.00	0.	10.0	280.9	2.0
09	01	01	1	23	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.45	0.86	1.00	0.00	0.	10.0	281.4	2.0
09	01	01	1	24	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.45	0.86	1.00	0.00	0.	10.0	281.4	2.0

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
09	01	01	01	10.0	1	81.	2.36	282.6	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

Model Output
Unit Emission Rates (1 g/s)

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** THE SUMMARY OF MAXIMUM PERIOD (43872 HRS) RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC		RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	NETWORK GRID-ID
				MEIR LOCATION						
ONSITE	1ST HIGHEST VALUE IS	6.05963	AT (	564788.28,	4192178.36,	85.91,	163.80,	1.50)	DC	
	2ND HIGHEST VALUE IS	5.93559	AT (	564778.28,	4192178.36,	85.01,	163.80,	1.50)	DC	
	3RD HIGHEST VALUE IS	5.77801	AT (	564768.28,	4192178.36,	83.93,	163.80,	1.50)	DC	
	4TH HIGHEST VALUE IS	5.52693	AT (	564758.28,	4192178.36,	82.95,	163.80,	1.50)	DC	
	5TH HIGHEST VALUE IS	4.90038	AT (	564718.28,	4192168.36,	79.62,	163.80,	1.50)	DC	
	6TH HIGHEST VALUE IS	4.78292	AT (	564803.06,	4192186.80,	87.82,	163.80,	1.50)	DC	
	7TH HIGHEST VALUE IS	4.77789	AT (	564698.28,	4192158.36,	77.77,	163.80,	1.50)	DC	
	8TH HIGHEST VALUE IS	4.62109	AT (	564813.06,	4192186.80,	89.33,	163.80,	1.50)	DC	
	9TH HIGHEST VALUE IS	4.55067	AT (	564788.28,	4192178.36,	85.91,	163.80,	6.10)	DC	
	10TH HIGHEST VALUE IS	4.52906	AT (	564778.28,	4192188.36,	85.79,	163.80,	1.50)	DC	
HAUL	1ST HIGHEST VALUE IS	13.12604	AT (	564518.16,	4191929.64,	62.99,	62.99,	1.50)	DC	
	2ND HIGHEST VALUE IS	11.67033	AT (	564508.16,	4191929.64,	62.34,	63.57,	1.50)	DC	
	3RD HIGHEST VALUE IS	11.34553	AT (	564788.28,	4192178.36,	85.91,	163.80,	1.50)	DC	
	4TH HIGHEST VALUE IS	10.91123	AT (	564698.28,	4192158.36,	77.77,	163.80,	1.50)	DC	
	5TH HIGHEST VALUE IS	10.64228	AT (	564778.28,	4192178.36,	85.01,	163.80,	1.50)	DC	
	6TH HIGHEST VALUE IS	10.50735	AT (	564498.16,	4191929.64,	61.80,	61.80,	1.50)	DC	
	7TH HIGHEST VALUE IS	9.95674	AT (	564768.28,	4192178.36,	83.93,	163.80,	1.50)	DC	
	8TH HIGHEST VALUE IS	9.89583	AT (	564518.16,	4191939.64,	63.68,	63.68,	1.50)	DC	
	9TH HIGHEST VALUE IS	9.57119	AT (	564718.28,	4192168.36,	79.62,	163.80,	1.50)	DC	
	10TH HIGHEST VALUE IS	9.47535	AT (	564488.16,	4191929.64,	61.56,	61.56,	1.50)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

Model Output
Unit Emission Rates (1 g/s)

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN

*** Message Summary : AERMOD Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 7953 Informational Message(s)

A Total of 43872 Hours Were Processed

A Total of 7152 Calm Hours Identified

A Total of 801 Missing Hours Identified (1.83 Percent)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
*** NONE ***

****
*** AERMOD Finishes Successfully ***
****

Montessori Family School Receptors

Sensitive Receptor Summary

UC Berkeley, The Gateway, Construction HRA
Addendum to LRDP

Concentration - Source Group: HAUL

Averaging Period	Rank	Peak	Units	Receptor ID	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		4.50946	ug/m^3		564833.06	4192186.80	91.77	1.50	163.80	
PERIOD		3.76985	ug/m^3		564843.06	4192186.80	92.96	1.50	163.80	
PERIOD		3.16497	ug/m^3		564833.06	4192196.80	92.99	1.50	163.80	
PERIOD		2.77773	ug/m^3		564843.06	4192196.80	94.41	1.50	163.80	
PERIOD		2.42501	ug/m^3		564853.06	4192196.80	95.96	1.50	114.47	
PERIOD		2.13144	ug/m^3		564863.06	4192196.80	97.36	1.50	114.47	
PERIOD		1.91584	ug/m^3		564873.06	4192196.80	98.03	1.50	114.47	
PERIOD		2.37890	ug/m^3		564833.06	4192206.80	93.97	1.50	163.80	
PERIOD		2.14295	ug/m^3		564843.06	4192206.80	95.53	1.50	163.80	
PERIOD		1.93160	ug/m^3		564853.06	4192206.80	97.05	1.50	114.47	
PERIOD		1.74799	ug/m^3		564863.06	4192206.80	98.42	1.50	114.47	
PERIOD		1.61365	ug/m^3		564873.06	4192206.80	98.97	1.50	114.47	

Montessori Family School Receptors

Sensitive Receptor Summary

UC Berkeley, The Gateway, Construction HRA
Addendum to LRDP

Concentration - Source Group: ONSITE

Averaging Period	Rank	Peak	Units	Receptor ID	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		4.28062	ug/m^3		564833.06	4192186.80	91.77	1.50	163.80	
PERIOD		4.06247	ug/m^3		564843.06	4192186.80	92.96	1.50	163.80	
PERIOD		3.34730	ug/m^3		564833.06	4192196.80	92.99	1.50	163.80	
PERIOD		3.19637	ug/m^3		564843.06	4192196.80	94.41	1.50	163.80	
PERIOD		3.02758	ug/m^3		564853.06	4192196.80	95.96	1.50	114.47	
PERIOD		2.86690	ug/m^3		564863.06	4192196.80	97.36	1.50	114.47	
PERIOD		2.74918	ug/m^3		564873.06	4192196.80	98.03	1.50	114.47	
PERIOD		2.70029	ug/m^3		564833.06	4192206.80	93.97	1.50	163.80	
PERIOD		2.59166	ug/m^3		564843.06	4192206.80	95.53	1.50	163.80	
PERIOD		2.48003	ug/m^3		564853.06	4192206.80	97.05	1.50	114.47	
PERIOD		2.37258	ug/m^3		564863.06	4192206.80	98.42	1.50	114.47	
PERIOD		2.30101	ug/m^3		564873.06	4192206.80	98.97	1.50	114.47	

Appendix C. Construction Risk Calculations

Table C1
Residential MER Concentrations for Risk Calculations

Contaminant	Source		Model Output [1] ($\mu g/m^3$)	Emission Rates [2] (g/s)	MEIR Conc. ($\mu g/m^3$)	Total MEIR Conc. Annual Average ($\mu g/m^3$)
(a)	(b)		(c)	(d)	(e)	(f)
Residential Receptors			**LRDP MM AIR-2.1**			
DPM	2022	On-Site Emissions	6.06	1.32E-03	8.01E-03	8.24E-03
		Truck Route	11.35	2.00E-05	2.27E-04	
	2023	On-Site Emissions	6.06	5.34E-04	3.24E-03	3.47E-03
		Truck Route	11.35	2.07E-05	2.35E-04	
	2024	On-Site Emissions	6.06	2.92E-04	1.77E-03	1.85E-03
		Truck Route	11.35	7.20E-06	8.17E-05	
	2025	On-Site Emissions	6.06	7.93E-04	4.80E-03	4.88E-03
		Truck Route	11.35	7.17E-06	8.14E-05	
PM2.5	2022	On-Site Emissions	6.06	1.25E-03	7.60E-03	7.81E-03
		Truck Route	11.35	1.92E-05	2.18E-04	
	2023	On-Site Emissions	6.06	5.29E-04	3.21E-03	3.43E-03
		Truck Route	11.35	1.97E-05	2.24E-04	
	2024	On-Site Emissions	6.06	2.85E-04	1.73E-03	1.80E-03
		Truck Route	11.35	6.80E-06	7.72E-05	
	2025	On-Site Emissions	6.06	7.87E-04	4.77E-03	4.84E-03
		Truck Route	11.35	6.77E-06	7.68E-05	
					Max PM2.5	0.008

Maximum Exposed Individual Resident (MEIR) UTM coordinates: 564788.28 E, 4192178.36N [(3)]

Montesorri School Receptors			**LRDP MM AIR-2.1**			
DPM	2022	On-Site Emissions	4.28	1.32E-03	5.66E-03	5.75E-03
		Truck Route	4.51	2.00E-05	9.03E-05	
	2023	On-Site Emissions	4.28	5.34E-04	2.29E-03	2.38E-03
		Truck Route	4.51	2.07E-05	9.34E-05	
	2024	On-Site Emissions	4.28	2.92E-04	1.25E-03	1.28E-03
		Truck Route	4.51	7.20E-06	3.25E-05	
	2025	On-Site Emissions	4.28	7.93E-04	3.39E-03	3.43E-03
		Truck Route	4.51	7.17E-06	3.23E-05	
PM2.5	2022	On-Site Emissions	4.28	1.25E-03	5.37E-03	5.45E-03
		Truck Route	4.51	1.92E-05	8.65E-05	
	2023	On-Site Emissions	4.28	5.29E-04	2.27E-03	2.36E-03
		Truck Route	4.51	1.97E-05	8.90E-05	
	2024	On-Site Emissions	4.28	2.85E-04	1.22E-03	1.25E-03
		Truck Route	4.51	6.80E-06	3.07E-05	
	2025	On-Site Emissions	4.28	7.87E-04	3.37E-03	3.40E-03
		Truck Route	4.51	6.77E-06	3.05E-05	
					Max PM2.5	0.005

Maximum Exposed School Receptor UTM coordinates: 564833.06 E, 4192186.8 N [(3)]

Total DPM concentrations used for Cancer Risk and Chronic Hazard calculations

[1] Model Output at the MEIR and maximum exposed school receptor, based on unit emission rates for sources (1 g/s).

[2] From Emission Rate Calculations (Appendix A - Construction Emissions).

[3] In general, the MEIR and maximum exposed school receptor locations are the receptor location associated with the maximum predicted AERMOD concentrations from off-road equipment operating at the construction site (i.e., on-site emissions). The calculated emission rates from the off-road equipment (on-site emissions) are approximately 2 orders of magnitude higher than the calculated emission rates for off-site truck hauling (see Appendix A). Therefore, the maximum pollutant concentrations associated with the off-road equipment produce the highest overall pollutant concentrations at the MEIR and maximum exposed school receptor and, consequently, highest calculated health risks.

Table C2
Residential MER Health Risk Calculations

Source		MEIR Conc. ($\mu g/m^3$)	Weight Fraction	Contaminant	URF $(\mu g/m^3)^{-1}$	CPF $(mg/kg/day)^{-1}$	Dose (by age bin) 3rd Trimester (mg/kg-day)	Dose (by age bin) 0 < 2 years (mg/kg-day)	Dose (by age bin) 2 < 9 years (mg/kg-day)	Carcinogenic Risks (by age bin) 3rd Trimester per million	Carcinogenic Risks (by age bin) 0 < 2 years per million	Carcinogenic Risks (by age bin) 2 < 9 years per million	**Total Cancer Risk** per million	**Chronic Hazards [3]** REL $(\mu g/m^3)$	**Chronic Hazards [3]** RESP
(a)		(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
Residential Receptors - LRDP MM AIR-2.1															
2022	On & Off-Site Emissions	8.24E-03	1.0E+00	DPM	3.0E-04	1.1E+00	2.85E-06	8.61E-06		9.09E-02	3.29E-01		0.4		1.65E-03
2023		3.47E-03						3.63E-06			4.63E-01		0.5		6.94E-04
2024		1.85E-03						1.94E-06	1.53E-06		1.73E-01	1.49E-02	0.2		3.70E-04
2025		4.88E-03							4.03E-06			1.07E-01	0.1		9.77E-04
												Total	**1.2**		**0.004**

Maximum Exposed Individual Resident (MEIR) UTM coordinates: 564788.28 E, 4192178.36N

		OEHHA age bin	3rd Trimester	0 < 2 years	2 < 9 years
		exposure year(s)	2022	2022-2024	2024-2025
Dose Exposure Factors:		exposure frequency (days/year)	350	350	350
		inhalation rate (L/kg-day) [1]	361	1090	861
		inhalation absorption factor	1	1	1
		conversion factor (mg/µg; m^3/L)	1.0E-06	1.0E-06	1.0E-06
Risk Calculation Factors:		age sensitivity factor	10	10	3
		averaging time (years)	70	70	70
		per million	1.0E+06	1.0E+06	1.0E+06
		fraction of time at home	0.85	0.85	0.72

exposure durations per age bin		exposure durations (year)		
Construction Year	Const Duration [2]	3rd Trimester	0 < 2 years	2 < 9 years
2022	0.55	0.25	0.30	
2023	1.0		1.0	
2024	1.0		0.70	0.30
2025	0.82			0.82
Total	3.37	0.25	2.0	1.12

[1] Inhalation rate taken as the 95th percentile breathing rates (OEHHA, 2015).

[2] Construction durations determined for each year to adjust receptor exposures to the exposure durations for each construction year (see App A - Construction Emissions).

[3] Chronic Hazards for DPM using the chronic reference exposure level (REL) for the Respiratory Toxicological Endpoint.

Table C3
Montessori Family School Health Risk Calculations

Source		MER Conc. ($\mu g/m^3$) (b)	Weight Fraction (c)	Contaminant (d)	URF $(\mu g/m^3)^{-1}$ (e)	CPF $(mg/kg/day)^{-1}$ (f)	Dose (by age bin) 2 < 16 years (mg/kg-day) (g)	Exposure Duration[2] (yr) (h)	**Cancer Risk** 2 < 16 years per million (i)	**Chronic Hazards [3]** REL ($\mu g/m^3$) (j)	RESP (k)
(a)											
Student Receptors - LRDP MM AIR-2.1											
2022	On & Off-Site Emissions	5.75E-03	1.0E+00	DPM	3.0E-04	1.1E+00	1.47E-06	0.55	0.04	5.0E+00	1.15E-03
2023		2.38E-03					6.10E-07	1.0	0.03		4.76E-04
2024		1.28E-03					3.29E-07	1.0	0.01		2.57E-04
2025		3.43E-03					8.78E-07	0.82	0.03		6.85E-04
								Total	**0.1**		**0.003**

Maximum Exposed School Receptor UTM coordinates: 564833.06 E, 4192186.8 N

	OEHHA age bin	PreK to 8th Grade 2 < 16 years
	exposure year(s)	2022-2025
Dose Exposure Factors:	exposure frequency (days/year)	180
	8-hour inhalation rate (L/kg-day) [1]	520
	inhalation absorption factor	1
	conversion factor (mg/µg; m^3/L)	1.0E-06
Risk Calculation Factors:	age sensitivity factor	3
	averaging time (years)	70
	per million	1.0E+06

[1] Inhalation rate taken as the 8-hour 95th percentile breathing rates, Moderate Activity (OEHHA, 2015).

[2] Construction durations determined for each year to adjust receptor exposures to the exposure durations for each construction year (see App A - Construction Emissions).

[3] Chronic Hazards for DPM using the chronic reference exposure level (REL) for the Respiratory Toxicological Endpoint.