3.0 REVISIONS TO THE DRAFT EIR

Revisions have been made to the Draft EIR as a result of comments received on the document and staff-initiated changes. Staff-initiated changes include recent project design modifications.

This chapter provides the location, either chapter or section number, title, and page number from the Draft EIR, and shows the complete sentence(s) where the change was made. Text added to the Draft EIR is shown in <u>underline</u> format, and deleted text is shown in ~~strikethrough~~.

This chapter, in combination with the Draft EIR, and the responses to comments section constitutes the Final EIR. Due to the nature of the text changes that are presented below, the changes are cited individually rather than in a reproduction of the entire Draft EIR. This presentation of revisions to the Draft EIR is consistent with *State* CEQA *Guidelines* Section 15162 detailing required Final EIR contents.

SECTION 2.0

Section 2.0, Executive Summary, page 2.0-9

Table 2.0-1, Summary of Impacts and Mitigation Measures, has been reproduced in its entirety in this section to show all additions and deletions that correspond to the changes to the impacts and mitigation measures for the project as proposed in the Draft EIR to those related to the Preferred Alternative, as discussed in **Section 2.0, Project Refinements**, of this document. Additionally, the first bullet under Helios Mitigation Measure TRANS-4 that relates to internal truck routes between the Helios project and Computational Research and Theory (CRT) project has been deleted as this was included in the Draft EIR in error. No excess earth materials from the CRT project would be hauled to the Helios project site for use as fill.

Table 2.0-1
Summary of Impacts and Mitigation Measures

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.1 Aesthetics			
Impact VIS-1		**Mitigation Measure VIS-1**	
Construction activities associated with the project would create temporary aesthetic nuisances for adjacent land uses.	Potentially Significant	LBNL and their contractors shall minimize the use of on-site storage and when necessary store building materials and equipment away from public view to the maximum extent feasible and shall keep activity within the project site and laydown areas.	Less than significant
Impact VIS-2		**Mitigation Measure VIS-2**	
The proposed project would alter views of the LBNL site and would result in a substantial adverse effect to a scenic vista or substantially damage scenic resources.	Significant	Trees and mature vegetation removal that is required for the access road construction will be minimized to reduce the potential visibility of the improved roadway.	Significant and Unavoidable
Impact VIS-3		**Mitigation Measure**	
The proposed project would alter the existing visual character of the Berkeley Laboratory site but would not substantially degrade the existing visual character and quality of the site and its surroundings.	Less than significant	No project-level mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.1 Aesthetics (continued)			
Impact VIS-4		**Mitigation Measure VIS-4**	
The proposed project would create a new source of substantial light or glare that would not adversely affect day or nighttime views in the area.	Potentially Significant	**Mitigation Measure VIS-4a**: Upon project implementation, the contractor shall install the PV panels at adequate angles that minimize the amount of glare that could be created while maintaining the functionality of the PV system. **Mitigation Measure VIS-4b**: Upon project implementation, the contractor shall install a mechanized system that controls the angle of the proposed PV louvers. This system shall be designed to ensure screening to building occupants while eliminating PV louver angles that would create substantial sources of glare. **Mitigation Measure VIS-4c**: To the maximum extent feasible, glazing materials shall be installed on the glass that comprises the PV louvers. The glazing shall be installed only if it can reduce glare while maintaining the functionality of the PV film within the glass.	Less than significant
4.2 Air Quality			
Impact AIR-1		**Mitigation Measure**	
Construction of the proposed project would generate short-term emissions of fugitive dust and criteria air pollutants that would not adversely affect local air quality in the vicinity of the construction site.	Less than significant	No project-level mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.2 Air Quality (continued)			
Impact AIR-2		**Mitigation Measure**	
The proposed project would generate long-term operational emissions of criteria pollutants from increases in traffic and stationary and area sources that would not adversely affect air quality.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact AIR-3		**Mitigation Measure**	
The proposed project would increase carbon monoxide concentrations at busy intersections and along congested roadways in the project vicinity but would not expose sensitive receptors to substantial pollution concentrations.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact AIR-4		**Mitigation Measure**	
The proposed project would not create objectionable odors affecting a substantial number of people.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact AIR-5		**Mitigation Measure**	
The proposed project would not expose maximally exposed individuals to cancer risks exceeding 10 in one million.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact AIR-6		**Mitigation Measure**	
The proposed project would not generate ground level concentrations of noncarcinogenic toxic air contaminants that would result in a Hazard Index greater than 1.0 for the maximally exposed individual.	Less than significant	No project-level mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.3 Biological Resources			
Impact BIO-1		**Mitigation Measure BIO-1**	
Construction of the proposed project would result in the permanent removal of 4.01 acres of vegetation.	Potentially Significant	**Mitigation Measure BIO-1a:** All trees removed to construct the proposed project will be replaced at a ratio of 2:1. **Mitigation Measure BIO-1b:** For trees that would be removed by the project and meet the UC Berkeley Specimen tree criteria, LBNL will replace the trees at a ratio of 3:1, consistent with UC Berkeley's tree replacement policy. **Mitigation Measure BIO-1c:** To ensure the successful replacement of trees, a tree replacement plan shall be implemented within the LBNL boundary and shall meet the following standards. (1) The plan shall identify suitable areas for tree replacement to occur such that existing native woodlands are enhanced and/or expanded. (2) The plan shall provide for replacing trees at a 2:1 ratio (or 3:1 for specimen trees, as appropriate), with native trees replaced in-kind and non-native trees replaced with appropriate native species. (3) The plan shall specify, at a minimum, the following: (a) the location of planting sites; (b) site preparation and planting procedures; (c) a schedule and action plan to maintain and monitor the tree replacement sites; (d) a list of criteria and performance standards by which to measure success of the tree replacement; and (e) contingency measures in the event that tree replacement efforts are not successful.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.3 Biological Resources (continued)			
Impact BIO-2		**Mitigation Measure BIO-2**	
The proposed project could result in direct and indirect adverse effects to creeks and seeps subject to ACOE and CDFG jurisdiction and sensitive plant communities and sensitive habitats.	Less than significant	To further ensure the success of the required Wetland Mitigation Plan, the plan shall specify, at a minimum, the following: (1) the goals of the mitigation effort; (2) the location of the mitigation site; (3) the approach, site preparation and planting procedures; (4) a schedule and action plan to maintain and monitor the mitigation site; (5) a list of criteria and performance standards by which to measure success of the wetland mitigation; and (6) contingency measures in the event that mitigation efforts are not successful.	Less than significant
Impact BIO-3		**Mitigation Measure**	
The proposed project would not adversely affect special-status nesting birds (including raptors) such that nests are destroyed, they abandon their nests or that their reproductive efforts fail.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact BIO-4		**Mitigation Measure**	
Removal of trees and structures during the breeding season would not result in direct mortality of special-status bats. In addition, construction noise would not cause maternity roost abandonment and subsequent death of young.	Less than significant	No project-level mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.3 Biological Resources (continued)			
Impact BIO-5		**Mitigation Measure BIO-5**	
Construction of the proposed project would not result in take or harassment of Alameda whipsnake, but would involve the removal of coastal scrub habitat that is potentially suitable for Alameda whipsnake.	~~Less than significant~~ Potentially Significant	**Mitigation Measure BIO-5a**: Signage shall be posted along the road identifying the potential presence of rare and protected wildlife and the need to proceed with caution for the safety of the species. **Mitigation Measure BIO-5b:** To compensate for the loss of 3.98 acres of Alameda whipsnake habitat (combination of scrub and annual grassland), LBNL will enhance, create, and/or restore habitat for Alameda whipsnake with a minimum of a 2:1 functional equivalence to the habitat to be removed by development of the access road under the Preferred Alternative. To the degree possible, the mitigation will take place on LBNL land. A minimum of 8.0 acres of enhancement (Eucalyptus and other non-native tree removal, scrub planting, rock outcrop creation) will occur on the contiguous habitat area to the west of the project site. This area is designated as open-space perimeter in the LBNL 2006 LRDP. This mitigation shall be implemented	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.3 Biological Resources (continued)			
Impact BIO-5 (continued)		**Mitigation Measure BIO-5 (continued)**	
		by developing an Alameda whipsnake habitat enhancement, creation, and management plan that includes the foregoing provisions that will be submitted to the Resource Agencies for approval. It will include details on which trees will be removed, and provide information on areas suitable for scrub creation or enhancement within that area. It will detail the following (1) the approach, site preparation, plant species, and planting procedures; (2) a schedule and action plan to maintain and monitor the mitigation site; (3) a list of criteria and performance standards by which to measure success of the mitigation; and (4) contingency measures in the event that mitigation efforts are not successful.	
Impact BIO-6		**Mitigation Measure**	
Development of the proposed project would not result in the loss of San Francisco lacewing and suitable habitat for the species.	Less than significant	No project-level mitigation measure required.	Less than significant
4.4 Cultural Resources			
Impact CUL-1		**Mitigation Measure**	
The proposed project would not cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact CUL-2		**Mitigation Measure**	
The proposed project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.	Less than significant	No project-level mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.4 Cultural Resources (continued)			
Impact CUL-3		**Mitigation Measure**	
The proposed project would not disturb any human remains, including those interred outside of formal cemeteries.	Less than significant	No project-level mitigation measure required.	Less than significant
4.5 Geology and Soils			
Impact GEO-1		**Mitigation Measure**	
The proposed project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact GEO-2		**Mitigation Measure GEO-2**	
The proposed project would not expose people to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic ground-shaking hazards, although some structures could sustain damage.	Potentially Significant	In addition to damage assessment of the Helios building (which is covered in the LBNL Master Emergency Program Plan), assessment of stormwater conveyance systems and detention/retention ~~vaults~~ ponds and Helios retaining walls will be conducted by the Damage Assessment Team following earthquakes strong enough to cause damage.	Less than significant
Impact GEO-3		**Mitigation Measure GEO-3**	
The proposed project could expose people and structures to seismic landslide hazards.	Potentially Significant	All recommendations of the site-specific geotechnical study shall be incorporated into the project design and implemented as part of the project.	Less than significant
Impact GEO-4		**Mitigation Measure GEO-4**	
The proposed project is located in an area of expansive soils that could create substantial risk to life or property.	Potentially Significant	Implementation of Mitigation Measure GEO-3	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.5 Geology and Soils (continued)			
Impact GEO-5		**Mitigation Measure GEO-5**	
The proposed project is located on a geologic unit that may be unstable or could become unstable as a result of the project.	Potentially Significant	The project proposes the use of water quality swales to treat stormwater runoff. These treatment facilities often incorporate infiltration of stormwater to provide water quality treatment. If site-specific geotechnical investigations indicate that infiltration of excess stormwater is not feasible due to slope-stability considerations, stormwater control and water quality treatment features will be designed with appropriate underdrain and/or retention systems to maintain the function of these facilities without infiltrating the collected stormwater.	Less than significant
4.6 Hazards and Hazardous Materials			
Impact HAZ-1		**Mitigation Measure**	
Implementation of the proposed project would increase the routine use, transport and storage of hazardous materials and other scientific materials at LBNL but would not create a significant hazard to the public or the environment under the routine or reasonably foreseeable upset and accident conditions.	Less than significant	No project-level mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.6 Hazards and Hazardous Materials (continued)			
Impact HAZ-2		**Mitigation Measure HAZ-2**	
The proposed project would not be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 but some project components would be located in areas where contamination may be present, and as a result, could create a potentially significant hazard to the public or the environment.	Potentially Significant	LBNL will prepare a due diligence assessment of all areas that would be excavated in order to install the new sewer pipeline. If contaminated materials are anticipated, the soils will be tested, and LBNL will implement appropriate measures to ensure that the contaminated soils or groundwater do not adversely affect construction workers and the environment.	Less than significant
Impact HAZ-3		**Mitigation Measure**	
The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact HAZ-4		**Mitigation Measure**	
The proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.	Less than significant	No project-level mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.7 Hydrology and Water Quality			
Impact HYDRO-1		**Mitigation Measure HYDRO-1**	
Development of the project site would increase the area of impervious surfaces that would result in increased volume of stormwater runoff that could contribute to erosion and/or siltation in Strawberry Creek.	Potentially Significant	~~**Mitigation Measure HYDRO-1a**: Should a hydromodification control facility not be feasible in the lower portion of the Helios access road, the primary hydromodification vault (located under the turnaround) shall be oversized to control and compensate for the additional impervious surfaces not controlled at in the lower portion of the access road. This would be done by redesigning the primary hydromodification vault using the Bay Area Hydrology Model to handle stormwater flow from existing impervious surfaces near the project area (equal to that of the extra access road impervious area) that currently do not contain hydromodification controls.~~ ~~**Mitigation Measure HYDRO-1b:**~~ Using the Bay Area Hydrology Model, calculations shall be provided following approval of the final project design to show that the proposed bioretention ~~vault (or vaults)~~ pond is ~~(are)~~ sized appropriately to control flows such that 'flow duration control' is provided between 10 percent of the 2-year recurrence storm and the 10-year recurrence storm.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.7 Hydrology and Water Quality (continued)			
Impact HYDRO-2		**Mitigation Measure ~~HYDRO-2~~**	
Development of the site would alter surface drainage patterns on the site which could result in increased peak flows and induce flooding in downstream reaches.	~~Potentially Significant~~ Less than significant	No project-level mitigation measure required. ~~**Mitigation Measure HYDRO-2a:** The hydromodification vault will be oversized to incorporate control of peak flows for the 25-, 50-, and 100-year events. The excess storage volume will be designed such that the 'hydromodification control' function of the vault (for peaks and flow duration than the 10-year storm) is not affected. Final design calculations showing no increases in peak runoff for the 25-, 50-, and 100-year events will be provided to and reviewed by LBNL staff upon finalization of the project design.~~ ~~**Mitigation Measure HYDRO-2b:** Stormwater detention (such as an oversized pipe system or detention vault) shall be provided for the portion of the project draining to the mid-canyon detention basin to control peak flows for the 25-, 50-, and 100-year storms. Final design calculations showing no increase in peak runoff for the 25-, 50-, and 100-year events will be provided to and reviewed by LBNL staff upon finalization of the project design. If a hydromodification vault is included for this section, it may be adapted to control for larger events (assuming that the hydromodification control function is not affected). Alternatively, should capacity allow, stormwater detention may be provided within the mid-canyon detention basin. In this case, final design calculations shall show that project runoff does not increase peak flows for the 25-, 50-, and 100-year storm events from the mid-canyon detention basin.~~	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.7 Hydrology and Water Quality (continued)			
Impact HYDRO-3		**Mitigation Measure**	
Project construction activities would not increase turbidity or decrease water quality in surface waterways.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact HYDRO-4		**Mitigation Measure ~~HYDRO-4~~**	
Stormwater runoff from the proposed parking area, access road and other impervious surfaces could potentially contribute to long-term pollutant discharges to surface waters, including on-site streams and downstream to Strawberry Creek and the Bay.	~~Potentially Significant~~ Less than significant	No project-level mitigation measure required. ~~**Mitigation Measure HYDRO-4a**: Vegetated swales will be incorporated into the project to maintain water quality of runoff and avoid exceeding water quality objectives prior to discharge to creeks. LBNL shall provide calculations showing that design of the swales meets recognized criteria for design of water quality BMPs. Should it be determined that appropriately sized vegetated swales are not feasible, then alternative RWQCB-approved methods of treating stormwater runoff, such as in-line pollution prevention devices or infiltration galleries, shall be incorporated into the project. All water quality treatment and source controls shall be summarized in the project specific SWPPP.~~ ~~**Mitigation Measure HYDRO-4b**: An in-line pollution prevention device (such as a CDS unit or Stormceptor) will be installed within the storm drain system along the proposed access road where vegetated bioswales are not feasible.~~	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.7 Hydrology and Water Quality (continued)			
Impact HYDRO-5		**Mitigation Measure HYDRO-5**	
Discharge of groundwater pumped or drained as part of construction-phase or post-construction-phase dewatering activities could adversely affect surface water quality.	Potentially Significant	Tritium monitoring shall continue at existing temporary monitoring wells SB31-02-2 and SB31-02-1 and shall be included in the long-term tritium monitoring program. In addition, sampling of discharges related to dewatering activities in the northern portion of the project, both during (where encountered in pier and/or test borings or other excavations) and after project construction (via pumping or gravity subdrains), shall be added to and managed under the tritium monitoring portion of LBNL Environmental Restoration Program. All water from the dewatering system in the northern portion of the project will be collected and transported to an ~~EPA~~ approved disposal facility, or will be re-infiltrated near the top of the plume to increase the residence time of the water and allow the tritium to decay.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.8 Land Use and Planning			
Impact LU-1		**Mitigation Measure**	
The proposed project would not conflict with the applicable land use plan or policy (i.e., 2006 LBNL LRDP, 2006 LBNL Design Guidelines, or UC Berkeley 2020 LRDP) adopted for the purpose of avoiding or mitigating an environmental effect.	Less than significant	No project-level mitigation measure required.	Less than significant
4.9 Noise			
Impact NOISE-1		**Mitigation Measure**	
Construction/demolition activities would temporarily elevate noise levels at the project site and surrounding areas.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact NOISE-2		**Mitigation Measure**	
Temporary vibration related to construction activities would not cause an impact.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact NOISE-3		**Mitigation Measure**	
Vehicular traffic associated with the Helios project would result in an incremental, but imperceptible, long-term increase in ambient noise levels.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact NOISE-4		**Mitigation Measure**	
The operation of heating, ventilating, and air conditioning equipment at the Helios Facility would not result in a substantial long-term increase in ambient noise levels.	Less than significant	No project-level mitigation measure required.	Less than significant
4.10 Population and Housing			
Impact POP-1		**Mitigation Measure**	
The proposed project would not induce substantial population growth in an area, either directly or indirectly.	Less than significant	No project-level mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.11 Public Services			
Impact PUB-1		**Mitigation Measure**	
The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities in order to maintain acceptable service ratios, response times, or other performance objectives, the construction of which could cause significant environmental impacts.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact PUB-2		**Mitigation Measure**	
The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities in order to maintain acceptable service ratios, response times, or other performance objectives, the construction of which could cause significant environmental impacts.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact PUB-3		**Mitigation Measure**	
The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered school facilities in order to maintain acceptable service ratios or other performance objectives, the construction of which could cause significant environmental impacts.	Less than significant	No project-level mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.11 Public Services (continued)			
Impact PUB-4		**Mitigation Measure**	
The proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered park or recreational facilities in order to maintain acceptable service ratios or other performance objectives, the construction of which could cause significant environmental impacts.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact PUB-5		**Mitigation Measure**	
The proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated.	Less than significant	No project-level mitigation measure required.	Less than significant
4.12 Transportation and Traffic			
Impact TRANS-1		**Mitigation Measure**	
The proposed Helios project would not cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system result in additional delay at study intersections under the Near-Term conditions.	Less than significant	No project-level mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.12 Transportation and Traffic (continued)			
Impact TRANS-2		**Mitigation Measure TRANS-2**	
The design of the proposed Helios parking lot area and access road would not result in inefficient and unsafe operations.	Less than significant	Final design should shall incorporate the following measures to improve the efficiency and ensure the safety of vehicles, bicyclists, and pedestrians: • Design the Centennial Drive/Helios Access Road intersection to provide adequate sight distance for a design speed of 35 miles per hour to allow vehicles to safely turn into and out of the new Helios Access Road. ~~Trim foliage near the intersection on a regular basis to maintain adequate sight distance.~~ • Locate the gates on the new roadway to provide adequate sight distance for vehicles approaching the gate. • ~~Provide turn-around area prior to the gate to allow vehicles that enter the access site roadway by error to turn around.~~ • Design the new Centennial Drive/Helios Access Road intersection, roadway, and parking lot area to accommodate shuttle bus circulation. • Provide minimal landscaping at the new Centennial Drive/Helios Access Road intersection (no shrubs or trees to exceed 3 feet in height). Maintain the landscaping regularly to provide adequate sight distance at this intersection.	Less than significant
Impact TRANS-3		**Mitigation Measure**	
The proposed Helios project would result in increases in transit ridership.	Less than significant	No project-level mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.12 Transportation and Traffic (continued)			
Impact TRANS-4		**Mitigation Measure TRANS-4**	
The proposed Helios project would result in increased parking demand that may exceed the available parking supply.	Significant	LBNL shall implement the following measures during special events at the Helios auditorium: • ~~Implement~~ Provide attendant and/or stacked parking for special events only. Attendant and/or stacked parking should not be used for regular day-to-day operations as it would be inconsistent with the LBNL principle to discourage driving and encourage alternative travel modes; and • Include information on availability of alternative transportation modes, such as LBNL shuttles, in announcements of special events at the Helios auditorium.	Less than significant
Impact TRANS-5		**Mitigation Measure**	
The proposed Helios project would ~~potentially~~ not result in increased hazards to pedestrians or bicyclists or conflicts with adopted policies, plans, or programs promoting walking or bicycling.	Less than significant	No project-level mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.12 Transportation and Traffic (continued)			
Impact TRANS-6		**Mitigation Measure TRANS-6**	
The construction of the proposed Helios project would temporarily and intermittently result in impacts on vehicles, pedestrians, or bicyclists, and parking.	Less than significant	LBNL shall include the following additional measures in the CTMP prepared for the proposed project: • ~~For trucks hauling fill material from the CRT site or the on-site borrow area, propose internal truck routes within the LBNL site to minimize disruption to vehicle, bicycle, and pedestrian circulation and parking.~~ • Consider stacked parking within the LBNL site or off-site parking for construction workers to minimize parking demand. • If necessary, require a flag person shall to direct traffic when trucks enter and exit the Helios Access Road on Centennial Drive.	Less than significant
4.13 Utilities and Service Systems			
Impact UTILS-1		**Mitigation Measure**	
Implementation of the Helios project would not require an expansion of the EBMUD wastewater treatment plant or an expansion of the City's sewer conveyance facilities.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact UTILS-2		**Mitigation Measure**	
The proposed project would require the construction of new storm water drainage facilities, the construction of which would not cause significant environmental impacts.	Less than significant	No project-level mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.13 Utilities and Service Systems (continued)			
Impact UTILS-3		**Mitigation Measure**	
The proposed project would result in the need for additional chilled water facilities, the construction and operation of which would not result in a significant environmental impact.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact UTILS-4		**Mitigation Measure**	
The proposed project would create additional demand for electricity and natural gas, but would not result in the construction of new or expansion of existing transmission or energy production facilities.	Less than significant	No project-level mitigation measure required.	Less than significant
5.0 Cumulative Impacts			
Cumulative Impact VIS-1		**Mitigation Measure**	
Construction activities associated with the proposed project, in conjunction with other near-term development, would not substantially affect visual resources.	Less than significant	No project-level mitigation measure required.	Less than significant
Cumulative Impact VIS-2		**Mitigation Measure**	
The proposed project, in conjunction with reasonably foreseeable near-term and long-term development, would not substantially affect visual resources.	Less than significant	No project-level mitigation measure required.	Less than significant
Cumulative Impact AIR-1		**Mitigation Measure**	
The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard.	Less than significant	No project-level mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
5.0 Cumulative Impacts (continued)			
Cumulative Impact AIR-2		**Mitigation Measure**	
Although the proposed project would result in greenhouse gas emissions, its contribution to the significant cumulative impact associated with greenhouse gas emissions would not be cumulatively considerable.	Less than significant	No project-level mitigation measure required.	Less than significant
Cumulative Impact AIR-3		**Mitigation Measure**	
Even though overall cumulative impacts will decrease over time, the proposed project will make some incremental contribution to cumulative cancer risk impacts associated with future development of LBNL and UC Berkeley.	Significant	Because most of the cancer risk from TACs is due to diesel particulate emissions, measures to reduce the risk (beyond regulations already in place that will substantially reduce diesel particulate emissions in the next 20 years) shall include those measures that could reduce vehicle travel to and from the Helios project (LRDP Mitigation Measures TRANS-1d and TRANS-3), and those measures that reduce emissions from construction equipment and the project's backup generator (LRDP Mitigation Measures AQ-1b and AQ-4a).	Significant and Unavoidable
Cumulative Impact AIR-4		**Mitigation Measure**	
The proposed project would not result in a cumulatively considerable contribution to cumulative noncancer health impacts associated with future development of LBNL and UC Berkeley.	Less than significant	No project-level mitigation measure required.	Less than significant
Cumulative Impact BIO-1		**Mitigation Measure**	
The proposed project, in conjunction with other reasonably foreseeable near-term projects and long-term development, would not result in a significant cumulative impact on biological resources.	Less than significant	No project-level mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
5.0 Cumulative Impacts (continued)			
Cumulative Impact CUL-1		**Mitigation Measure**	
The proposed project, in conjunction with other reasonably foreseeable near-term and long-term development, would not result in a significant cumulative impact on cultural resources.	Less than significant	No project-level mitigation measure required.	Less than significant
Cumulative Impact GEO-1		**Mitigation Measure**	
The proposed project, in conjunction with reasonably foreseeable near-term and long-term development, would place new structures and introduce an increased population in a seismically active region.	Less than significant	No project-level mitigation measure required.	Less than significant
Cumulative Impact HAZ-1		**Mitigation Measure**	
The proposed project, in conjunction with reasonably foreseeable near term and long-term development, would involve the use of hazardous chemicals that would not pose a significant cumulative risk to the public or the environment.	Less than significant	No project-level mitigation measure required.	Less than significant
Cumulative Impact HAZ-2		**Mitigation Measure**	
The proposed project, in conjunction with reasonably foreseeable near term and long term development, would result in a cumulative impact related to emergencies associated with a wildland fire or a major earthquake, but the project's contribution to the cumulative impact would not be considerable.	Less than significant	No project-level mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
5.0 Cumulative Impacts (continued)			
Cumulative Impact HYDRO-1		**Mitigation Measure**	
The proposed project, in conjunction with reasonably foreseeable near term and long-term development, would not result in a cumulative impact on surface water resources.	Less than significant	No project-level mitigation measure required.	Less than significant
Cumulative Impact LU-1		**Mitigation Measure**	
The proposed project, in conjunction with reasonably foreseeable near term and long-term development, would not involve a significant cumulative impact related to land use.	Less than significant	No project-level mitigation measure required.	Less than significant
Cumulative Impact NOISE-1		**Mitigation Measure**	
Near-term development in the vicinity of the project site would increase exterior noise levels during construction.	Less than significant	No project-level mitigation measure required.	Less than significant
Cumulative Impact NOISE-2		**Mitigation Measure**	
The proposed project, in conjunction with reasonably foreseeable near term and long-term development, would not result in a significant cumulative permanent increase in ambient noise levels.	Less than significant	No project-level mitigation measure required.	Less than significant
Cumulative Impact POP-1		**Mitigation Measure**	
The proposed project, in conjunction with reasonably foreseeable near-term and long-term development, would not result in a significant cumulative impact on population or housing.	Less than significant	No project-level mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
5.0 Cumulative Impacts (continued)			
Cumulative Impact PUB-1		**Mitigation Measure**	
The proposed project, in conjunction with reasonably foreseeable near-term and long-term development, would not result in a significant cumulative demand for public services.	Less than significant	No project-level mitigation measure required.	Less than significant
Cumulative Impact TRANS-1		**Mitigation Measure Cumulative TRANS-1**	
The proposed project, in conjunction with reasonably foreseeable near-term and long-term development, would degrade intersection levels of service ~~not result in a significant cumulative increase in levels of service~~.	Significant	Further mitigation is not feasible.	Significant and Unavoidable
Cumulative Impact TRANS-2		**Mitigation Measure**	
Although construction traffic associated with near-term projects could result in temporary periods of traffic congestion on city streets, the project's contribution to the impact would not be cumulatively considerable.	Less than significant	No project-level mitigation measure required.	Less than significant
Cumulative Impact TRANS-3		**Mitigation Measure**	
The proposed project, in conjunction with other reasonably foreseeable near-term and long-term development, would not substantially affect transit, parking, or pedestrian and bicycle circulation.	Less than significant	No project-level mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
5.0 Cumulative Impacts (continued)			
Cumulative Impact UTILS-1		**Mitigation Measure**	
The proposed project, in conjunction with reasonably foreseeable near-term and long-term development, would not result in a significant cumulative demand for utilities and service systems.	Less than significant	No project-level mitigation measure required.	Less than significant

SECTION 4.0

Section 4.1

Section 4.1, Aesthetics, page 4.1-11

- Building footprints shall be designed with long-narrow aspect ratios in parallel to natural terrain to the degree consistent with program needs.
- To the degree feasible, the massing of new buildings will be configured to minimize their visibility when viewed from equal and lower elevations, and to complement the hillside terrain.
- Large buildings shall be designed to reduce their perceived mass and impart a human scale to the site. Buildings with a horizontal dimension greater than 200 feet or a vertical dimension greater than four stories shall incorporate changes in both façade plane and vertical height to reduce its perceived scale and bulk.

Section 4.1, Aesthetics, page 4.1-21

When seen from this area the project would appear within the context of various built elements including roadways, parking lots, buildings, and other structures associated with the laboratory as well as hillside grasslands and groupings of mature trees. As discussed in the Project Description, the proposed project would implement a landscaping plan to screen the building and for the proposed green roofs. The landscaping plan would place 20 36-inch box trees along the western and southwestern edge of the access road. The trees that would be selected for planting would be consistent with the fire fuel clearance requirements, and both the LBNL and UC Berkeley fire marshals would review the plan. These trees would help screen some portion of the building from public views, including the Panoramic Way view. Even with the implementation of the project's landscaping plan, however, the majority of the Helios building and portions of the access road and retaining walls would still be visible to the public. Additionally, cuts in the hillside associated with grading of the access road would be visible. The impact is considered significant. In addition to the project's landscaping plan, Helios Mitigation Measure VIS-2 is proposed to reduce this visual impact.

Section 4.1, Aesthetics, page 4.1-23

Helios Mitigation Measures VIS-4a through VIS-4c are proposed to reduce ~~light and~~ glare impacts.

Section 4.3

Section 4.3, Biological Resources, page 4.3-1

Roughly one-half of LBNL land is within Strawberry Canyon ~~and has a south-facing orientation~~; the balance is within Blackberry Canyon and has a west-facing orientation. The Main Campus of the University of California, Berkeley, is located west of LBNL and the Hill Campus[1] is located to the north, east, and south of LBNL. The Hill Campus is an 800-acre portion of the University of California, Berkeley. The Hill Campus extends from Stadium Rim Way to Grizzly Peak Boulevard, is primarily designated as open space, and includes a 300-acre Ecological Study Area and the Botanical Garden. Northeast of LBNL is the 2,000-acre Tilden Regional Park and to the south is the 205-acre Claremont Canyon Regional Preserve, both of which are owned and managed by the East Bay Regional Park District. ~~Regional open space, including the 2,000-acre Tilden Regional Park, lies to the northeast.~~

Section 4.3, Biological Resources, page 4.3-7

Chicken Creek, a tributary to the South Fork of Strawberry Creek, is located to the west of the project site. The creek is perennial and has been culverted though the developed areas of LBNL. The above ground portions of the creek are steeply incised and support dense and well-developed oak-bay woodland. As the woodland is associated with the creek and associated hydrologic conditions, it is considered to be a riparian woodland. The portion of Chicken Creek that is adjacent to the project site is separated by an 8-foot-high chain-link fence. Portions of the Chicken Creek riparian area abut the fence line. The creek occurs entirely outside of the project boundaries.

Section 4.5

Section 4.5, Geology and Soils, page 4.5-3

The proposed Helios project is located approximately 0.5 mile ~~west~~ east of the Hayward Fault trace.

Section 4.7

Section 4.7, Hydrology and Water Quality, page 4.7-24

Helios Mitigation Measure HYDRO-1: Using the Bay Area Hydrology Model, calculations shall be provided following approval of the final project design to show that the proposed bioretention ~~vault (or~~

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1 The Hill Campus is an 800-acre portion of the University of California, Berkeley. The Hill Campus extends from Stadium Rim Way to Grizzly Peak Boulevard, is primarily designated as open space, and includes a 300-acre Ecological Study Area and the Botanical Garden.

~~vaults)~~ pond is ~~(are)~~ sized appropriately to control flows such that flow duration control is provided between 10 percent of the 2-year recurrence storm and the 10-year recurrence storm.

Section 4.7, Hydrology and Water Quality, page 4.7-25

Furthermore, as discussed under Helios Impact HYDRO-5 and required by Helios Mitigation Measure HYDRO-5, all water from the dewatering system would be collected and transported to an U.S. EPA-approved disposal facility, or re-infiltrated near the top of the tritium plume to increase the residence time of the water and allow the tritium to decay~~, or discharged to the sanitary sewer system~~.

Section 4.7, Hydrology and Water Quality, page 4.7-27

Helios Mitigation Measure HYDRO-4a: Vegetated swales will be incorporated into the project to maintain water quality of runoff and avoid exceeding water quality objectives prior to discharge to creeks. LBNL shall provide calculations showing that design of the swales meets recognized criteria for design of water quality BMPs. ~~Should it be determined that appropriately sized vegetated swales are not feasible, then alternative RWQCB-approved methods of treating stormwater runoff, such as in-line pollution prevention devices or infiltration galleries, shall be incorporated into the project.~~ All water quality treatment and source controls shall be summarized in the project-specific SWPPP.

Section 4.13

Section 4.13, Utilities, Service Systems, and Energy, page 4.13-3:

LBNL currently pays EBMUD for assessed sewer services. The University has also contributed to the City of Berkeley's sewer upgrade program, which is intended to increase wet weather flow capacity and decrease I/I conditions. The City of Berkeley's I/I correction program was initiated in 1987 and includes rehabilitation or replacement of 50 percent of the City's existing system over 30 years, as well as installation of 12 miles of new sewer lines to accommodate overflow conditions by the year 2007. By 1999, over 25 percent of the planned replacement and rehabilitation had been completed and 10 miles of the proposed 12 miles of new sewer lines had been installed. As of 2006, over 50 percent of the City sewer collection system has been replaced and rehabilitated and 12 miles of new relief sewer lines had been installed. An interceptor line along Adeline Street, completed in 1992, now conveys wet weather flow to EBMUD's storage and treatment facilities. The City's I/I correction program allows for a 20 percent increase in the base wastewater flow due to changes in land use or population (City of Berkeley 2001~~,~~ City of Berkeley 2008).

Wastewater from LBNL's western portion, including the CRT project site, generally flows into sub-basin 17-013 by way of the Hearst Monitoring Station. The sanitary sewer lines on Hearst Avenue are relatively new and in good condition, and they flow directly into the interceptor on ~~Shattuck Avenue~~ Oxford Street. Sub-basin 17-013 is not currently constrained during peak wet weather flows, and it is expected to have future wet weather capacity to meet LBNL's growth needs during the term of the 2006 LRDP (LBNL 2007).

Section 4.13, Utilities, Service Systems, and Energy, page 4.13-9:

~~**LRDP MM UTILS-4**: LBNL shall develop a plan for maximizing diversion of construction and demolition materials associated with the construction of the proposed project from landfill disposal.~~

SECTION 8.0

Section 8.0, Organizations and Persons Consulted, page 8.0-1

Tom Boardman, Associate Civil Engineer, East Bay Municipal Utility District ~~Pacific Gas & Electric~~