APPENDIX 4

Comments on the Draft EA and DOE Responses

APPENDIX 4

TABLE OF CONTENTS

Appendix Page

4 COMMENTS ON THE DRAFT EA AND DOE RESPONSES

Introduction 1

Master Responses 3

Responses to Comment Matrix 20

DOE's Responses to CRT Draft EIR Comments 46

Public Agency Comments 63

References 71

Introduction

INTRODUCTION

The Draft Environmental Assessment (EA) for the Computational Research and Theory (CRT) facility at the Lawrence Berkeley National Laboratory (LBNL) was distributed for review and comment on September 14, 2010. This Appendix summarizes public and agency comments received during the 30-day public comment period and responses to those comments. Public agency comments are presented in their original format in the **Public Agency Comments** section**,** at the end of this appendix. All agencies, organizations, and individuals who commented on the Draft EA are listed below.

Commenters on the Draft EA

Public Agencies

- East Bay Municipal Utility District (EBMUD), William Kirkpatrick (October 15, 2010)
- Bay Area Air Quality Management District, Jean Roggenkamp (October 18, 2010)

Organizations

- Building & Construction Trades Council of Alameda County, Andreas Cluver (October 4, 2010)
- Committee to Minimize Toxic Waste, Pamela Sivhola (October 15, 2010)
- Committee to Minimize Toxic Waste, Gene Bernardi (September 20 and October 15, 2010)
- Hills Conservation Network, Dan Grassetti, (October 15, 2010)
- Hills Conservation Network, Madeline Hovland (October 15, 2010)
- Nyingma Institute, Sylvia Gretchen (October 14, 2010)
- Save Strawberry Canyon, Lesley Emmington Jones (October 14, 2010)
- Save Strawberry Canyon, Zee Hakimoglu (October 9, 2010)
- Strawberry Creek Watershed Council, Carole Schemmerling (October 18, 2010)

Individuals

- Curtis, Garniss (October 15, 2010)
- Eiseley, Jane, (October 11, 2010)
- Fairfield, Richard (October 15, 2010)
- Legg, Victoria (October 9, 2010)

- Matis, Howard (September 20, 2010)
- Miller, Tom (October 9, 2010)
- Sarachan, Laurie (October 12, 2010)
- Scott, Peter (October 14, 2010)
- Sharp, JM (October 15, 2010)
- Taylor, Matthew (October 9, 2010)
- Thompson, Daniella (October 15, 2010)
- Woodcock, Charlene (October 18, 2010)

Responses to all comments are provided in the **Response to Comments Matrix,** in this Appendix, alongside a summary of each corresponding comment. To provide a more detailed response to an issue of particular concern to the public, this Appendix also includes "Master Responses," in the following section.

Master Responses

MASTER RESPONSES

Master Response 1 – Geological Conditions Underlying the LBNL Site

Many public comments on the CRT Facility Draft EA state or suggest that no more buildings should be constructed at the Lawrence Berkeley National Laboratory (LBNL) site due to the unstable geological conditions of the LBNL site. Comments largely reiterate or mirror the hypotheses put forward by University of California Berkeley (UCB) Professor Emeritus Garniss Curtis in an article published in the Berkeley Daily Planet in the autumn of 2008[1] and a letter submitted to the Regents of the University of California in spring of 2008.[2] This master response has been developed to address comments from the public regarding the geology of the LBNL site and to correct factual errors and misrepresentations presented in those public comments. For the affected environment and environmental consequences related to geology, please see **subsections 4.2.1, 6.2.1,** and **Section 5.1,Geology and Soils** in the EA.

In his 2008 article, Professor Emeritus Curtis argued that the LBNL site is underlain by two geologic structures of concern: (1) a volcanic caldera containing material with low strength, and (2) west-dipping Cretaceous strata sub-parallel to the slope above Foothill student housing. He alleged that the latter feature could cause the slope to fail during a major earthquake on the Hayward fault and destroy all the buildings from the western margin of the LBNL site to Doe Library on the UC Berkeley campus and beyond, a distance of over 1,000 feet west of Gayley Road.

In January 2010, the organization Save Strawberry Canyon and one of its representatives sent a letter to UC LBNL, posted a video to the web featuring Professor Emeritus Curtis, and published a commentary in the Berkeley Daily Planet[3] reiterating these concerns. The letter and video presented a geologic cross-section of the LBNL site, and the video also presented a geologic map of the LBNL site. These figures portrayed most of the LBNL site as underlain by volcanic rock filling a caldera, portrayed this collapsed caldera deposit (i.e. in-fill) as hundreds of feet thick, and indicated this deposit is in direct contact with Cretaceous strata to the west. The volcanic rock filling the caldera was portrayed as having cavern-sized voids filled with water. Public comments on the CRT Facility Draft EA make repeated reference to these submissions and to Professor Emeritus Curtis' hypotheses of 2008.

Figure 4.0-1 in the EA shows the most recent and comprehensive bedrock geology map of the entire LBNL site, which was prepared by Parsons Engineering Science, Inc. (PES) and UC LBNL. This mapping

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1 Curtis, Garniss H, "Emeritus Professor of Geology Weighs In on Memorial Stadium." Berkeley Daily Planet. 16 October 2008.

2 Curtis, Garniss H. Email to Anne Shaw, University of California Office of the President. 11 May 2008.

3 Wright, Georgia. "Partisan Position: The Volcano Beneath." Berkeley Daily Planet. 28 January 2010.

data was drawn from hundreds of borings[4] as well as from trenches, outcrops, construction excavations, and road cuts (PES and UC LBNL 2000). This map indicates that, contrary to the assertions by some commenters, volcanic rocks do not underlie most of the LBNL site, but rather occur in various isolated to semi-isolated masses. Calculations from this map indicate that 46 acres of the 202-acre site, or 23 percent of the LBNL property, is underlain by volcanic rock, sedimentary rock intercalated with volcanic rock, and sedimentary rock including volcaniclastics (a type of rock that contains volcanic material). The majority of these 43 acres are currently not developed, and the UC LBNL and DOE do not anticipate further development in these areas.

The theory that volcanic rocks at LBNL originated in an alleged caldera collapse alluded to by some commenters is not borne out in the geologic observations of the LBNL site. **Figure 4.0-2** shows a geologic section through the LBNL site from PES and UC LBNL (2000), again based on data from many years of borings, outcrops, road cuts and construction excavations. The thickest volcanic masses at the site, shown on **Figure 4.0-2**, are less than 100 feet thick rather than hundreds of feet thick, as portrayed in the Save Strawberry Canyon video featuring Professor Emeritus Curtis. Further, none of these masses is in contact with Cretaceous strata as portrayed in the video, but rather are underlain by the Tertiary Orinda Formation. Strata in this formation dip moderately to the northeast across all but the very eastern portion of the site indicating structural continuity that does not accord with these strata being blocks within a collapsed caldera.

Volcanic masses at LBNL do not contain the high proportion of tuff (consolidated volcanic ash) indicative of collapse synchronous with eruption that is a defining feature of collapsed calderas. Further, none of the breccias (coarse angular volcanic fragments) observed at LBNL exhibit the welding expected to occur in at least some of them had they been formed in a caldera coincident to eruption. In short, the geometry of the volcanic rock masses does not accord with a caldera collapse origin.

Another part of the caldera hypothesis is the contention that caldera-filling rock masses are weak. For instance in the video by Save Strawberry Canyon, Professor Emeritus Curtis characterizes these materials as "mud with essentially no rigidity," which describes a fluid. On this basis, some public comments characterize the volcanic rocks at LBNL as having little to no strength and as thus unsuitable to support structures. Setting aside that there is not a scientific consensus that caldera-filling rock masses are particularly weak, and setting aside that the evidence does not indicate there is collapsed caldera deposits at LBNL, the geomorphology developed on the volcanic rocks at and in the vicinity of the LBNL site is not consonant with supposing these rocks are essentially a fluid, or even relatively weaker than the

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4 The boring logs can be found in copies of the geologic reports at the LBNL website http://www.lbl.gov/ Community/ CRT/index.html

surrounding rocks. On the contrary, these rocks underlie promontories, such as that occupied by the Lawrence Hall of Science and the naturally occurring sidehill bench upon which the first cyclotron building was constructed at LBNL. These geomorphic features indicate this material generally has higher strength and erosion resistance than the surrounding materials rather than lower strength, as presumed by some commenters.[5]

Some public comments suggest that there are aquifers and/or perched bodies of subsurface water, particularly in the volcanic rock, that pose a threat to on-site or off-site facilities because they increase the likelihood of slope instability. Hydrogeologic conditions at LBNL have been thoroughly investigated as part of LBNL's Environmental Restoration Program (ERP). These investigations have found that, as is typical throughout the San Francisco Bay Area, groundwater exists at LBNL within pores between sediment particles, such as between the grains of sand in sandstone, and rock fractures that are generally smaller to much smaller than a millimeter across. The investigations have also determined that the volcanic rock at LBNL is among the rock units with the highest permeability at the site, but well within the range of permeabilities for geologic materials in general. In addition, high permeability is not recognized by engineering geologists and geotechnical engineers as correlating significantly with slope instability. For instance, drainage of groundwater relieves the water pressure that contributes to slope instability, and groundwater drains more quickly from higher permeability materials. While groundwater conditions at LBNL can contribute to slope instability, particularly during and after intense precipitation events, no particularly adverse groundwater conditions relative to other hilly locations in the Bay Area have been encountered.

The hydrogeology of LBNL site has been investigated and is well understood, contrary to the implications and assertions made by various commenters. For instance, data on hydraulic conductivity in the Final RCRA Facility Investigation Report by PES and UC LBNL (2000) indicate the Great Valley Sequence bedrock has relatively high hydraulic conductivity compared to the other hydrogeologic units at LBNL, although this conductivity is moderate relative to the range of conductivity for earth materials in general. Module D of PES and UC LBNL (2000) shows that groundwater flow is generally parallel to the slope of the overlying topography at the CRT site and radially away from the Building 70 complex.

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5 This is corroborated by geotechnical tests and descriptions regarding the strength of LBNL volcanic rock samples in three reports covering portions of the volcanic rock close to the CRT site record (Harding Lawson and Associates 1966, 1975, 1983). Bore logs in two of these reports show the standard penetration test equivalent blow counts. This is the number of times a 140-pound hammer must be dropped 30 inches onto a 1.5-inch inside diameter sampler tube to drive it one foot. Most of the standard penetration test-equivalent blow counts were in excess of 50 blows per foot in volcanic rock or the sampler could not be driven a foot due to the rock strength. Bore logs in two of the reports describe the strength of the rock encountered. The strength of the volcanic rocks was typically described as "moderately strong" or stronger, meaning the rock could withstand at least a few heavy hammer blows without breaking.

The report indicates groundwater levels in the vicinity of the CRT site are typically 50 feet below the existing ground surface.

As shown on **Figures 4.0-1** and **4.0-2** taken from PES UC LBNL (2000), the Great Valley Sequence is overlain by the generally low permeability Orinda Formation. The Orinda Formation is in turn overlain in some places by volcanic rock, the other hydrogeologic unit at the lab with relatively high hydraulic conductivity. Consequently, the Great Valley Sequence is hydraulically disconnected from the volcanic rocks at LBNL by the intervening Orinda Formation.

Professor Emeritus Curtis' second contention in the video by Save Strawberry Canyon is that west-dipping Cretaceous strata sub-parallel to the western slope of LBNL would cause this slope to collapse in a Hayward fault earthquake. In the 2008 Berkeley Daily Planet article, he stated such a slide could destroy all the buildings up to Doe Library on the UC Berkeley campus and potentially beyond. This library is over 1,000 feet from the base of this slope.

Studies[6] undertaken by PES and UC LBNL (2000), Fugro (2002), and Kleinfelder (2006) on the western slope of LBNL did not find west-dipping on this slope. Rather, these successive studies found these strata generally dip north between 20 and 50 degrees. The mischaracterization of the attitude of these Cretaceous strata aside, the larger concern raised by public comments regards potential failure of this slope and damage to areas of the campus to the west during a strong-to-major earthquake (magnitude 6 to 8) on the Hayward fault. The generally accepted upper limit uplift rate of 1 millimeter per year in the Bay Area indicates this slope has existed for at least tens of thousands of years, during which it has experienced at least tens of Hayward fault earthquakes based on current understanding of this fault. Bedrock failure of this slope during any of these earthquakes would have deposited material derived from the Cretaceous strata at the toe of the slope, which is occupied by the Hayward fault.

Fault and geotechnical investigations[7] for Foothill student housing in this location did not encounter such landslide deposits. Rather, soil containing rhyolite, a volcanic rock, was encountered west of the Hayward fault. Neither this rock, nor any volcanic rock, exists on the slope above. This rock was likely translated north by the movement of the block east of the fault from the mouth of Strawberry Creek, which does have volcanic rock in its watershed. In addition, an inactive shear zone located generally along Gayley Road to the west (the "Louderback trace") was overlain by only a few feet of natural soil deposits. The last movement on this shear zone was at least 11,000 years ago, indicating that any landslide deposits in this location are at least that old. Consequently, the geologic record indicates the

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6 These studies can be found on the LBNL website http://www.lbnl-cag.org/

7 Harding Lawson Associates, 1986, 1988a, 1988b. These studies can be found on the LBNL website http://www.lbnl-cag.org/

western slope of LBNL is stable with regard to potential bedrock landslides impinging on areas beyond the toe of the slope posited in the public comments. The potential for landslides in the Berkeley Hills exists whether or not the DOE maintains a national laboratory on the LBNL site. The Proposed Action would reduce the potential for landslides by removing the small landslide present on site prior to construction.

Master Response 2 – Site Specific Geologic/Geotechnical Conditions

Some of the public comments on the Draft EA state or suggest that the CRT site is unsafe for the construction of the proposed building. These comments typically make one or more of the following assertions: (1) the CRT site is dangerous because it is located in the Alquist-Priolo Earthquake Fault Zone of the Hayward fault; (2) the CRT site is on a steep slope that is a fault scarp; (3) the CRT site is unstable and prone to landslides; (4) there have not been sufficient field explorations to adequately and accurately assess site conditions. This master response has been developed to address these comments from the public regarding the geology of the CRT site and to correct factual errors and misrepresentations presented in the public comments.

A. Project Location relative to the Hayward Fault Earthquake Fault Zone

The State Alquist-Priolo Act (A-P Act; 1972, California Public Resources Code, Chapter 7.5, Division 2) defines an active fault as one that has ruptured the ground surface within the past approximately 11,000 years (the Holocene Epoch). The main purpose of the A-P Act is to prevent the construction of buildings used for human occupancy on active faults, and to prevent loss of life due to building collapse from surface-fault rupture (Hart and Bryant, 1997; California Division of Mines and Geology [CDMG], 1999). The A-P Act is designed specifically to mitigate "by avoidance" the hazard associated with surface-fault rupture during earthquakes.

The law requires the State Geologist to establish regulatory zones known as Earthquake Fault Zones around the surface trace of active faults and to issue maps depicting these zones. The earthquake fault zones vary in width but are 0.25 mile wide on average. The maps prepared by the State Geologist are distributed to all affected cities, counties, and state agencies for their use in planning and controlling new or renewed construction. Local agencies must regulate most development projects within the zones. Projects include all land divisions and most structures for human occupancy. Before a project can be permitted, cities and counties must require a geologic investigation to demonstrate that proposed buildings will not be constructed across active faults. An evaluation and written report of a specific site must be prepared by a licensed geologist. If an active fault is found, a structure for human occupancy

cannot be placed over the trace of the fault and must be set back from the fault (generally 50 feet) (California Geological Survey, Department of Conservation website; accessed November 30, 2010).

As stated in the EA and as shown in the site plan presented in Kleinfelder's 2007 geotechnical investigation report, the eastern boundary of the Alquist-Priolo Earthquake Fault Zone of the Hayward fault intersects the CRT site. To comply with the State Alquist-Priolo Act, a site-specific surface-fault rupture study was performed by Kleinfelder in 2006, which demonstrated active faults do not exist on the CRT site. The 2006 surface fault rupture study was peer reviewed by WLA. To address peer review comments provided by WLA, Kleinfelder included assessment of the explorations previously performed, which included all of the mapping and subsurface data collected to date (borings, test pits, trenches and seismic refraction profiles) for the CRT site as well as the findings of previous surface-fault rupture studies performed at adjacent or nearby sites (e.g., Fugro West, Inc., 2002; HLA, 1988; WLA, 2007), and prepared a revised fault investigation report, which is dated May 13, 2009. All of the data including Fugro's seismic refraction and fault trench data and Kleinfelder's independent seismic refraction and fault trenching data did not reveal evidence for the existence of faults at the CRT site. It should also be noted that geologic publications, including the A-P Earthquake Fault Zones maps, do not show a mapped trace anywhere on the CRT site. Based on the geologic information obtained and geologic exploration performed, Kleinfelder, WLA, and Fugro concur that there is no evidence that active faults intersect the planned CRT building site. All of these studies conclude that the active fault trace of the Hayward fault lies hundreds of feet west of the proposed CRT building site, near the base of the slope.

Also, as part of project construction, near-surface colluvial soils and/or landslide deposits at the CRT site will be excavated and removed prior to the construction of the building. At that time, Kleinfelder's Certified Engineering Geologist will observe and document the conditions exposed, and again check for evidence of active faulting. However, the existing site-specific data coupled with the data from nearby A-P studies (see Plate 6, Kleinfelder 2006 Fault Study report) suggest that it is highly unlikely that previously undetected active faulting will be found intersecting the CRT building site.

B. CRT Site Slope

Some comments assert that the steep slope at the project site is a fault scarp associated with the Hayward fault, and is therefore likely to become unstable under seismic conditions or during wet periods.

The slope on which the CRT project would be built is not a fault scarp if the term is taken in the usual sense of connoting a surface coincident with a fault plane. The Hayward fault has been mapped as dipping 80 degrees to the west from horizontal (Graymer et al. 2005). The western slope of LBNL slopes 20 degrees from horizontal (measured from the top of the slope at the western edge of the Building 50/70

area to the base of the slope near Cyclotron Road). Because the angle and direction of the slope's dip is not the same as the angle and direction of the Hayward fault, the slope cannot be a fault scarp associated with the Hayward fault. In addition, the results of geological fault trenching, review of aerial photographs, geologic mapping, and review of published geologic literature indicate the slope is not a fault scarp feature and is underlain in the near-surface by north-dipping, unfaulted bedrock strata. The bedrock structure exposed by explorations on the CRT site is not consistent with that expected from a near-vertical dipping fault plane such as that documented for the Hayward fault.

Another way to ascertain the potential of the existing slope to be a fault scarp is to examine past uplift rates of the tectonic plates on either side of the Hayward fault and compare these rates with the features of the slope at the CRT site. Although academic in nature, this assessment discussed below provides additional evidence that the CRT slope is not a fault scarp feature and provides evidence for the low potential for deep seated landslides at the site. Maximum tectonic uplift rates throughout the Bay Area are thought be less than 1 millimeter (mm)/yr, or 1 meter (m)/thousand years (Ferritti et al. 2004). Assuming the maximum uplift rate of 1 mm/yr, assuming only east side up motion (although as noted above, available data indicates west side up motion currently [Williams 1992]), and discounting erosion of the ridge crest, the 80 m (260 ft) high slope between the Hayward fault and the top of the slope at the Building 50/70 area took at least 80,000 years to develop. The reported recurrence interval for earthquakes on the northern Hayward fault ranges from <270 years to 710 years (Hayward Fault Paleoearthquake Group, 1999), although this is recognized to probably derive from an incomplete paleoseismic record (2007 Working Group on California Earthquake Probabilities, 2008). Even taking the maximum interval of 710 years, the subject slope has experienced more than 100 earthquakes on the immediately adjacent portion of the Hayward fault. The reported recurrence interval for the southern Hayward fault is 170 years ± 82 years for the last 11 events. The interval for the last five events was reported as 138 years ± 58 years (Lienkamper and Williams 2007). Taking the minimum interval of 138 years indicates the subject slope has experienced nearly 600 such earthquakes.

Despite the number of earthquakes occurring during the development and existence of this slope, fault investigations regarding the Hayward fault concluded landslide deposits due to bedrock slope failure are not present at the toe of the slope below the project site (HLA 1988), indicating the slope is stable on a broad scale as it relates to bedrock slope failures.

With respect to concerns regarding slope instability during wet periods, note that the slope has existed for tens of thousands of years, including periods with substantially more precipitation than at present. The minimum time for this slope to develop includes most of the Tahoe and all of the Tenaya and Tioga glacial episodes. Multiple lines of evidence indicate that California has received more precipitation during these cooler periods (e.g., Oster et al. 2009). The slope in the vicinity of the project does not exhibit

deep bedrock instability despite experiencing most earthquakes on the nearby Hayward fault during wetter periods. While the available retrospective climate data suggest the site will become drier overall in a warmer world (associated with climate change), should the site become wetter the evidence indicates it will still be stable. Nonetheless, it is unlikely that global warming will have a measurable or noticeable effect in the site vicinity during the lifetime of this project.

With regard to the project site and its immediate vicinity, a seismic slope stability investigation conducted in accordance with CGS SP 117 confirmed that there is a relatively low potential for seismically-induced landslides to occur at the CRT site (Kleinfelder 2010b). While it is true that severe storms do cause and have caused landslides in the Berkeley Hills in the past and will again in the future, development of the CRT facility will increase the stability of this site by removing surficial deposits that are prone to shallow landsliding.

C. Suitability of Project Site for the Proposed CRT Building

Several comments questioned the suitability of the proposed site for the CRT building, and suggest or assert that the proposed building would not be stable given the presence of expansive or landslide materials and potentially adverse bedding conditions on the CRT site.

The site and vicinity is underlain by Cretaceous marine sedimentary strata, composed of interbedded sandstone and shale. These rocks of the Great Valley Sequence constitute bedrock at the site. The use of the term "bedrock" to describe in-place rock of the Great Valley Sequence is entirely consistent with local geologic and engineering precedents and practices. All structures proposed as part of the project will be supported by foundations within this bedrock; no building foundations have been designed to be supported by colluvium, landslide deposits, or expansive soil/bedrock.

Regarding certain comments provided by Dr. Curtis (UC Berkeley Professor), UC LBNL cannot comment on his observations of reported westward dipping beds at angles of 30 to 40 degrees because the precise location of this exposure has not been documented. However, Dr. Curtis' observations would imply that there are adverse bedding or "dip-slip" conditions on the slope at the proposed CRT or other sites at LBNL. The Kleinfelder (2006 and 2007) subsurface explorations using multiple trenches and test pits to assess the underlying soil and bedrock conditions at the CRT site encountered northeast-striking (i.e., roughly parallel to slope gradient) and north to northwest dipping (i.e., roughly perpendicular to slope gradient) bedding, which is not adverse bedding and therefore, would be considered favorable bedding for development at the CRT site. The geologic and geotechnical studies (Kleinfelder, 2006 and 2007) included reconnaissance mapping; review of existing geologic reports, published geologic information,

and historic aerial photographs; and trench and test-pit bedrock exposures. These studies did not indicate evidence of deep-seated bedrock landslides in the immediate vicinity of the CRT site.

The subsurface explorations did expose localized, relatively thin, surficial, generally colluvial-derived landslide deposits covering one portion of the site. These deposits will be removed during site grading and will no longer exist or present a slope instability concern.

Regarding the expansion potential of on-site and import fill and bedrock material, test results performed on siltstone bedrock from samples obtained from explorations presented in Kleinfelder's 2007 report indicated that the siltstone bedrock has a low expansion potential. Additionally, only non-expansive imported fill will be allowed on site. The quality of the material to be used for on-site grading/construction is detailed in the project specification. The project geotechnical engineer will observe and test the material to be used to confirm that the project specifications are met.

Regarding construction of foundations, no foundations for the proposed project will be constructed within landslide, colluvial, or expansive deposits. All of the landslide deposits that underlie the building site will be removed during grading for the project. The existing colluvium will be removed and the CRT building will be founded on the underlying bedrock with micropiles extending completely within bedrock to support localized areas near the front of the excavation. Note that these landslide and colluvial soils do not extend below the proposed depth of excavation. The remaining portions (outside the building footprint) will be stabilized through engineering measures. The cut for the building will also be stabilized using standard engineering measures. The proposed adjacent cooling towers and adjacent retaining wall will be constructed on drilled piers that gain support from the underlying bedrock (i.e., the piers extend into the bedrock). In addition, the foundation of the cooling towers will not be connected with the CRT building foundation.

One comment expressed concern that the proposed design of the HPC floor with few interior columns could make the building susceptible to collapse (pancaking) during a major earthquake. Because the proposed structure will be designed in strict accordance with the current seismic design provisions of the California Building Code, the interior columns should not fail and therefore the potential for "pancaking" is highly unlikely. The future CRT building would be designed by a qualified structural engineer experienced in seismic design to resist and accommodate the strong ground shaking associated with the Maximum Credible Earthquake for the site.

In summary, the vast amount of geologic data collected has shown that this site does not possess hazards, such as active fault traces, landslide deposits, adverse bedding conditions, expansive bedrock, or a high potential for slope instability under static or seismic conditions (after grading), that would preclude

construction of the proposed building. With sound, site-specific structural, civil, and structural engineering design (as required by the 2007 California Building Code), similar to those used throughout the Bay Area and in accordance with current building codes, the proposed facility can be safely constructed for its intended purpose. Additional explorations, including borings, would serve to refine the design criteria, and would not negate the viability of the proposed project. All data clearly demonstrate that the site is suitable for the proposed construction.

D. Data Used in the Investigation of the CRT Site

Some comments focus on the data reported in or used in the Kleinfelder reports for the CRT project and some questioned the adequacy or accuracy of the data and reports prepared for the project. Comments also concern the relocation of the CRT site within the existing slope and the "usefulness" of the data obtained for the previous CRT location.

As described above, an extensive amount of site specific and vicinity data were used to confirm that no active faults are present on the CRT building site and to characterize the site conditions so as to develop recommendations for the building design and construction. Although the geologic and geotechnical investigations were performed for a building footprint that has since moved approximately 50 feet northward, the information presented in the existing geologic and geotechnical reports is sufficient for the design of the proposed structures. There will be additional exploration performed at the site prior to construction, but these explorations are to refine the design and will not result in negating the potential use of the site for the proposed structure. During construction, a certified engineering geologist and/or geotechnical engineer will be on site full-time during site grading and foundation installations to further assess the subsurface conditions and check for fault traces, landslide deposits, and bedrock quality.

Some comments are related to the subsurface information shown on the borings and site plans in Kleinfelder's reports. Comments include questions regarding past exploration shown in Kleinfelder's 2007 geotechnical report that was performed by GeoResources, Kleinfelder, and Fugro. The GeoResource borings were considered in Kleinfelder's evaluation and are shown on the map and are not "useless," as one commenter stated. Another concern was the omission of Kleinfelder's 2006 Blackberry Gate boring logs from Kleinfelder's 2007 geotechnical report. Although not included in the report, these boring logs were considered in the 2007 report and were also considered in Kleinfelder's 2009 evaluation. Those logs can be found in the Blackberry Gate report (Kleinfelder, 2006). With the exception of borings drilled within a previous fill repair, these Blackberry Gate borings encountered bedrock at shallow depths. And finally, trench logs of the three Fugro trenches (T-1 to T-3) were not included in the Kleinfelder 2007 fault hazard investigation report for the CRT but the data from those trenches, as well as all the other pertinent geologic and geotechnical findings, were considered in the assessment and analysis of the site geologic

and geotechnical conditions, and were used to develop Kleinfelder's (2007 and 2009) conclusions and recommendations for the proposed project.

A concern was raised that the information presented in the various borings in and around the site varied. However, variations in the subsurface conditions encountered in the borings drilled at the site are to be expected due to their locations along the hillside and within areas of varying past grading activities at the site. Most borings are tens, if not hundreds of feet apart. The lithologic differences between the various Fugro and Kleinfelder borings presented above are consistent with the site conditions and what would be expected based on natural and man-made (i.e., fill) conditions at the specific boring locations. For example, the Fugro and Kleinfelder borings are hundreds of feet apart from each other. The Fugro (2002) borings B-1 and B-2 encountered clay fill to depths of 5 to 6 feet overlying 4 to 10 feet of clay deposits, which represent other fill or colluvial deposits north of the site near Building 50D and adjacent to Cyclotron Road. Boring K-3 encountered bedrock near the surface because K-3 was located in a previously cut area near Buildings 70 and 70A. Kleinfelder boring K-1 near the southeastern footprint of the CRT encountered 7 feet of clay fill at the western edge of the constructed fill pad for Building 70A and directly overlies bedrock.

A concern was raised regarding the existing information used for Kleinfelder's fault study. Plate 6 that is referred to at the end of the Kleinfelder (2006) fault investigation report shows the general outline of previously performed fault studies in the vicinity of the proposed CRT project site. The original comment requested that specific California Geological Survey (CGS) studies at the site or referenced "probes" be included in Kleinfelder's report. However, based on Kleinfelder's review of available information from CGS, no probes or borings were performed by CGS at the site.

Master Response 3 – Decision to Prepare an Environmental Assessment

Numerous comments on the CRT Facility Draft EA state that the EA analysis is not adequate and request that the DOE prepare an Environmental Impact Statement (EIS) to evaluate the Proposed Action.

An EIS was not initially prepared because the Proposed Action is not among the classes of actions listed in Appendix D to Subpart D of the DOE NEPA Implementing Procedures (10 CFR Part 1021) that typically require preparation of an EIS. In accordance with CEQ and the DOE regulations, the DOE prepares an EA in order to assist agency planning and decision making, including a decision on whether to prepare an EIS. If, based on the Final EA, the DOE determines that there are no significant impacts, a Finding Of No Significant Impact would be issued, and an EIS would not be required.

Following CEQ and DOE NEPA implementing procedures, DOE prepared this Environmental Assessment to assist the Agency in determining whether to prepare an EIS. This EA is complete, appropriately detailed, and has followed all of the applicable requirements of NEPA and the DOE's NEPA Implementing Procedures.

Master Response 4– Gas Main Risk at CRT Site

Many public comments were received expressing concern about the location of gas distribution pipelines at the LBNL site. In light of the recent gas transmission pipeline explosion in the City of San Bruno, commenters were concerned that a similar event could occur at the CRT building if the pipelines are aging, or if pipeline leaks are not repaired in a timely manner, or if pipelines are located adjacent to other utility lines such as water and sewer lines. Commenters requested additional information about the relocation of utilities as part of construction of the proposed CRT facility.

Information about utility relocation that would take place as part of the proposed project has been added to the EA in **subsection 3.1.6, Utilities and Infrastructure**. A 6-inch medium pressure gas main runs between Cyclotron Road and Buildings 50 and 70 and provides gas service to the LBNL site; no other natural gas pipelines or mains serve LBNL. As this gas main passes through the CRT site, the Proposed Action would relocate the gas main approximately 400 feet to the north of its current alignment to allow for the construction of the proposed building. Utility lines are routinely relocated in conjunction with construction projects.

This gas main is not similar to the 30-inch transmission pipeline with a pressure of 386 pounds per square inch gauge (PSIG) that was involved in the recent San Bruno accident. Instead, the gas main has a 6-inch diameter and a pressure of 13.5 PSIG. There are automatic shut-off valves at every building on the LBNL site and at the point of connection of this gas main to the PG&E line at the northeast of Foothill parking lot. The gas main at the LBNL site was installed in the 1960s and upgraded in the 1980s. A subcontractor performs a leak survey on the gas main every year and any leaks that are detected are repaired immediately. The most recent leak survey conducted in December 2009 indicated that the main is in good condition other than a few non-hazardous leaks that were repaired (Manesco Corporation 2009). The potential for distribution line leaks and ruptures is greatly reduced by the routine leak surveys and the automatic shutoff valves. The relocated gas main will not be in the same trench as water, electricity or sewer lines. Safety would improve with the installation of the new gas main because it would be constructed to meet current codes.

The gas main crosses the Hayward fault near the Foothill parking lot where automatic shut off valves are present that would shut off supply in the event of a rupture. The Proposed Action would not make any changes to the gas main in the area around the Hayward fault. The Proposed Action would therefore not increase the risk of explosion of the gas main compared to current conditions. The fact that the modifications to the gas line would meet current code requirements, that the gas line is only a medium pressure line, and that there are automatic shutoff valves would ensure that a gas pipeline explosion would not be a reasonable scenario.

Master Response 5 – Purpose and Need of the Proposed Action and Alternatives

Several comments on the CRT Facility Draft EA request evaluation of alternative sites and comparison to the Proposed Action site. Comments were also received with respect to the need to place the CRT facility at the Proposed Action site.

The EA evaluates the environmental effects associated with developing the CRT facility at three off-site alternative locations as well as another location on the LBNL site, and the No Action alternative as described in **Section 3.2, Alternatives to the Proposed Action**. These alternatives were carried forth for detailed evaluation because they would meet the project purpose of consolidation of the dispersed programs at a location on the LBNL site (see further discussion of the purpose and need of the Proposed Action, below). Consistent with CEQ regulations (40 CFR 1502.14), each alternative was evaluated in detail so that readers may evaluate the comparative environmental impacts. **Table 1.0-1, Summary Table of Actions and Impacts**, provides a summary comparison of environmental effects associated with each alternative. The EA also considered and eliminated other on-site and off-site alternatives, as described in **Section 3.3, Alternatives Considered but Eliminated**. These alternatives were eliminated because they would not meet the purpose and need of the Proposed Action or were determined to be otherwise unreasonable. In addition, two other building sites on the LBNL site were considered during CEQA review, but were found to be unreasonable.

The purpose of and the need for the Proposed Action are described in **Section 2.0, Purpose and Need,** of the EA. As stated there, while the NERSC computers and staff are located in Oakland, the CRD staff is located on the LBNL site, and CSE researchers are located on the UC Berkeley campus, dispersed in multiple buildings in individual and group workspaces that are inadequate in both size and functionality. This limits the opportunities for frequent interaction and collaboration and future growth. These obstacles to collaboration and growth are anticipated to continue in the future.

As a result of the aforementioned challenges, there is an immediate and long-term need to increase computer floor space, to improve workspace size and functionality for both individual and group efforts, and to co-locate CRD staff and some CSE researchers adjacent or nearby to the NERSC. A facility or facilities that bring people and systems together in space designed for functionality and collaboration would result in improved efficiency and productivity, as well as foster intellectual exchanges. Such a facility or facilities should also provide:

- Integrated and appropriately designed space that houses and enables the continued operation and future advancement of LBNL's NERSC HPC national user facility, CRD, and joint LBNL/UC Berkeley CSE programs;
- Adequate space, chilling capacity, and infrastructure to accommodate next-generation computing equipment and to allow for continual future upgrades to such equipment;
- Access to a large, reliable, and economical electrical power source. The power source should be capable of serving both the immediate and potential future needs of LBNL's computing program;
- Ability to connect the facility to modern fiber optics that can economically be connected to the existing high-speed DOE ESnet Bay Area Metropolitan Area Network;
- Convenient access to other LBNL scientific facilities, programs, researchers, and services; a location that fosters interaction and collaboration between the NERSC staff and others, including UC Berkeley researchers.

For the reasons above, the DOE proposes to relocate and consolidate ASCR-funded LBNL programs with other LBNL/UC Berkeley programs focusing on computational and computer science research in a new facility on the LBNL site. The Proposed Action includes the relocation of the NERSC HPC national user facility, the relocation and consolidation of all NERSC and CRD staff, and the creation of a collaborative space for the joint UC Berkeley/LBNL CSE program. Housing these activities in the same new building as the supercomputing systems would centralize and co-locate all similar and related functions and programs to improve efficiency and productivity and foster intellectual exchanges and collaboration. The location for the new building to house these relocated programs and computational systems should be in close proximity to the UC Berkeley campus to enable extensive collaboration of CSE staff with NERSC and CRD staff.

Master Response 6 – Visual Quality of the Proposed Action Site

Several comments indicate that the Proposed Action site represents a portion of a natural landscape that is a visual resource in the area that would be lost if the CRT building were constructed. This EA discusses the affected environment and environmental effects related to visual quality in **subsections 4.2.6** and **6.2.6,** and **Section 5.6, Visual Resources.**

As depicted in EA **Figure 3.0-2, Approximate Proposed Action Site**, the site is surrounded by development. It has been altered and disturbed over several decades of use by LBNL and likely by agricultural uses preceding that. The site is relatively narrow, horn-shaped, and tapers into the nexus of two roadways that converge at its northernmost point. It is bounded by the LBNL site's busiest roadway (Cyclotron Road) along its entire western edge, and to the east by the road that services the Building 50 and Building 70 complexes. It is transected by the Seaborg stairway and an underground utility corridor (which includes its above-ground appurtenances), and it bears visual evidence of the topographical modifications caused by past grading activities. The site hosts many visible tree stumps from the past removal of eucalyptus trees.

As described in the EA, the predominant natural vegetation on the site consists of approximately 75 (non-native) eucalyptus trees and a few (native) hardwoods, as well as a sparse understory of non-native grasses. The Building 50 complex – which features several of the Lab's tallest buildings, and the Building 70 complex, are perched above and overshadow the upper ridge of the site and roadway along its eastern edge. Immediately below the site, along the western edge, a bustle of activity occurs along Cyclotron Road, which features virtually all of LBNL's vehicle, bus, and truck traffic, a guard check point, and a turn-out to the Building 88 accelerator complex below.

The site is not publicly accessible as it is within the LBNL site fenceline. It is also not visible from off-site locations, with the exception of the uppermost portions of some of the site's tallest eucalyptus trees, which are visible from limited areas nearby. A grove of visual screening trees lines the western side of Cyclotron Road, directly downslope of the project site. The screening trees would not be affected by the Proposed Action and would continue to provide visual buffering and screening of the site from City of Berkeley vantage points below. Intervening topography and trees would obstruct views of the building from locations in Strawberry Canyon to the southeast of the project. It is also over the hill from the Strawberry creek drainage basin. The project site does not include the riparian area associated with the Cafeteria Creek, which is east and south of the project site and outside the area of disturbance. Implementation of LBNL SPFs VIS-4a and VIS-4b, which are included in the Proposed Action, would reduce effects related to light and glare. Furthermore, cumulative effects related to visual resources were considered in **subsection 6.2.6.** As discussed there, any potential visual impact related to the Proposed Action would not be cumulative with the impacts from other projects because the other projects proposed at LBNL, UC Berkeley and the City of Berkeley would not form part of the scenic views that contain the project site.

Master Response 7 – Risk of Wildland Fire at the CRT Site

Several commenters expressed concerns about the risks of wildland fires at the LBNL site in general and at the proposed CRT site in particular.

The risks associated with wildland fires at the Proposed Action site are evaluated in **Section 5.3, Hazards, Human Health, and Accidents**, of the EA. Firefighting services at the Proposed Action site are described in **subsection 4.2.12** and **Section 5.12, Public Services**. As stated in the EA, the fire station on the LBNL site is within 1,500 feet of the project site and would be adequately staffed to serve the project.

The LBNL site is situated in the lower East Bay hills and is thus in an urban/wildland interface area where wildland fires are a concern. However, due to intensive, proactive efforts undertaken by the UC LBNL, the site stands as a bulwark against wildland fire risk both to its own population and assets as well as to those of its surrounding neighbors.

After careful planning and analysis of fuel loads and potential fire patterns following the East Bay Hills fire of 1991, the 200-acre LBNL site has undergone a major vegetation management program to transform the site into a natural fire break. Hundreds of Eucalyptus trees and flammable understory were removed or scaled back. Annual vegetation management is ongoing to this day and includes limbing up and removal of problematic (such as sick or dying) trees, and the mowing and removal of brush and grasses by hand gardening and goats. Vegetation management is carefully undertaken to ensure that flame heights and temperatures would not be sufficient to consume buildings and large trees throughout the site, nor to create fire bands that spread fire across the site and to adjacent properties.

The LBNL site includes a fully staffed (24-hour) Alameda County fire station with engines, equipment, and firefighters trained in fighting wildland fires. In fact, this LBNL-funded fire station provides primary fire protection services to many surrounding neighborhoods in Berkeley and Oakland.

The site includes three 200,000-gallon water tanks to maintain constant pressure and ample supplies of fire-suppressive water in the event of fire and/or earthquake. While East Bay Municipal Utility District water lines servicing LBNL and its neighbors may be damaged during an earthquake, LBNL will be able to access this gravity-pressurized water to fight resulting fires in the surrounding East Bay hills and to resupply pumper trucks.

LBNL gas lines include automated shut-off valves that would be activated if lines were severed during an earthquake or similar event. LBNL's newer buildings, including the proposed CRT building, are constructed to the latest fire codes (e.g., have sprinklers) and therefore would be safer than older buildings, including most of those in surrounding neighborhoods and properties. Given these safeguards,

which are required by the California Building Code or are standard practices by UC LBNL, the risks from fires would be minor.

Response to Comment Matrix

Response to Comments Matrix

Comment #	Commenter	Comment Summary	Response
1	Bay Area Air Quality Management District	The commenter states that the Draft EA's determination of no significant effects was not based on the BAAQMD thresholds because the project analysis began before the new thresholds were adopted by the Air District.	Environmental impacts from greenhouse gas emissions associated with the Proposed Action and alternatives are discussed and evaluated in **subsections 4.2.8** and **5.8, Greenhouse Gases,** in the EA. In May 2010, BAAQMD proposed Draft CEQA Guidelines that include thresholds of significance for GHG emissions. The draft guidelines were adopted on June 2, 2010. The new thresholds do not apply to this project, however, as BAAQMD directed lead agencies to apply the new thresholds to only those projects for which a Notice of Preparation is published and for which environmental analysis commences on or after June 2, 2010 (See Bay Area Air Quality Management District, Resolution No. 2010-06). The environmental review for the CRT project under CEQA began in 2007 and was completed in 2008, and the NEPA review was commenced in October 2009. As such, based on the applicable federal threshold, the impact from the project's projected GHG emissions is not considered substantial.

Comment #	Commenter	Comment Summary	Response
2	Bay Area Air Quality Management District	The commenter states that the Air District urges the DOE to commit to additional measures to reduce the project's GHG emissions, including adding on-site renewable energy sources; meeting LEED platinum building standards; and employing the most energy-efficient computer servers.	The project has been designed to the highest energy efficiency standards prevailing at this time. The project is committed to purchasing Renewable Energy Credits (RECs) equivalent to at least 7.5% of its total on and off site electric power usage. The proposed project incorporates numerous design features that are consistent with AB 32 goals and strategies and with reduction measures in the BAAQMD guidelines. These features would reduce the proposed project's GHG emissions by substantially more than 29 percent compared to business as usual (BAU). These measures are the following: (1) The project has been designed to meet LEED Gold standards, which means among other things that the project's energy consumption would be more than 30 percent better than the state's energy efficiency standards for residential and nonresidential buildings established under Title 24, Part 6 of the California Code of Regulations. The project includes numerous measures to minimize energy use, including a cool roof, natural ventilation, daylighting, use of high performance computer exhaust heat to warm up the office space, etc. (2) The project would be supplied electricity through the Northern California DOE Laboratory Electric Power Purchasing Consortium, which means that at a minimum 20 percent of the power consumed by the project would come from renewable sources. With respect to the rest of the power used, it is anticipated that as a result of the Renewable Portfolio Standards,[1] 33 percent of the energy supplied by investor owned utilities within California by 2020 will be from renewable sources which would further reduce the indirect power generation emissions that would be associated with the project. (3) The project includes limited parking only for disabled employees and visitors (in order to avoid generation of new trips) and includes bike facilities, showers, transit service, and a transportation demand management (TDM) program that would reduce the project's vehicular emissions by more than 40 percent compared to BAU. (4) The project includes rainwater harvesting to minimize water use (and water supply and distribution related GHG emissions). (5) The project includes roof and non-roof paving materials that are designed to reduce the facility's heat island effect. (6) The project includes waste reduction measures, including use of recycled materials. Because all feasible GHG reduction measures have been incorporated into the proposed project and because these collectively would reduce the project's GHG emissions by substantially more than 29 percent compared to BAU, the proposed project would not set back the state in its AB 32 related efforts.

1 California's Renewable Portfolio Standard program requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources. Investor-owned utilities were required to source 20 percent of their energy from renewable sources by 2010. This will increase to 33 percent by 2020, in accordance with Executive Order # S-14-08, which directs the California Public Utilities Commission to develop regulations to meet this goal.

Comment #	Commenter	Comment Summary	Response
2 (cont.)			Note that due to the high-energy use associated with the proposed project, a detailed evaluation of the project's energy use and opportunities to minimize the use was conducted by UC LBNL in July 2010. The study examined the two components of the project separately - the high performance computer (HPC) component and the office component and compared the proposed project design against benchmarked data to determine how the project compares to other similar (although not directly comparable) facilities. The HPC component, due to its energy use associated with supercomputers, was compared to data centers using two metrics - Power Usage Effectiveness (PUE) and Data Center Infrastructure Efficiency (DCiE; DCiE is the reciprocal of PUE). The study showed that the CRT HPC has been designed with a PUE of 1.081 and a DCiE of 0.925, which is better than any data center benchmarked to date. Note that a DCiE of 0.5 is considered typical practice for a data center and a DCiE of 0.7 and above is better practice. With respect to the office component of the project, the annual energy consumption was compared to the appropriate baseline building consumption defined by the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE)/Illuminating Engineering Society of North America (IESNA) Standard 90.1-2007 for a comparable office building. The office component as designed would achieve 47 percent energy savings when compared to the baseline-building model. The CRT project site is not conducive for the development of on-site alternate energy sources such as wind and solar. However, as part of its sustainability plan, LBNL is exploring the potential to develop these resources elsewhere on the LBNL site. LBNL is also considering the following renewable energy projects. 1. LBNL Site 1 MW Photovoltaic (PV) 2. LBNL site wide renewables 3. Tri-Lab Collaboration - Large scale wind and PV project at Lawrence Livermore National Laboratory Since the bulk of the CRT's projected GHG emissions are associated with its energy consumption, additional design elements that would advance the project to a LEED platinum would still not help reduce these off-site GHG emissions associated with power generation.

Comment #	Commenter	Comment Summary	Response
2 (cont.)			NERSC has made energy efficiency a priority in its computer system procurements and evaluations. The latest NERSC supercomputer uses liquid cooling technology and the competitively selected system provided the best scientific application performance per megawatt. Older, less energy efficient, systems are considered for cost-effective replacement. Due to high-energy costs, NERSC always includes energy efficiency as one of the selection criteria when considering new supercomputers. However, as these supercomputers are needed for advanced research and as part of the DOE's mission, the final selection cannot be based solely on energy efficiency considerations. Server consolidation and virtualization (a way to make such machines more efficient) save energy by replacing mostly idle computers with a smaller number of less idle systems. NERSC supercomputers solve extremely large and complex scientific problems and, unlike commercial servers, have less than 10% average idle time. NERSC will continue to explore other approaches that would further improve computer energy efficiency.
3	East Bay Municipal Utility District	The commenter states that its comments on the NOP for the EA still apply.	Response to NOP comments are presented in **Response to Comments 4** and **5** below.
4	East Bay Municipal Utility District	The commenter state that EBMUD's comments were incorporated in the Final EIR under CEQA and should be incorporated in the EA. The comments on the EIR are related to water service, water recycling and conservation.	Consistent with the analysis in the Final EIR, the EA states in **subsection 5.11** that "the proposed facility would include high-efficiency fixtures and storm water reclamation for toilet flushing and recirculation of cooling water, which would reduce water demand." As stated in the Final EIR, UC LBNL has and would continue to coordinate with EBMUD to incorporate water-efficient practices and consider a recycled water system for the Lab.

Comment #	Commenter	Comment Summary	Response
5	East Bay Municipal Utility District	The commenter indicated that wet weather flows are a concern for EBMUD. The Regional Water Quality Control Board (RWQCB) issued an order prohibiting further discharges from EBMUD's Wet Weather Facilities and a subsequent stipulated order for preliminary relief that requires EBMUD to begin work to reduce inflow/infiltration and lay the groundwork for future efforts to eliminate discharges from Wet Weather Facilities. EBMUD would like consideration in the EA regarding wet weather discharges and how LBNL proposes to reduce impacts.	The comments concern the issue of infiltration and inflow (I/I) of storm water into the sanitary sewer system. UC LBNL will ensure any new wastewater collection systems for the project are constructed to prevent inflow/infiltration to the maximum extent feasible. Because this effort would involve the installation of new subsurface water supply and wastewater infrastructure, the proposed project would not cause any increase in I/I. Furthermore, UC LBNL has made substantial progress in the past 20 years in addressing sitewide I/I issues as well as reducing overall sanitary sewer flows. As of 2006, a concerted sewer infrastructure upgrade program has reduced LBNL's wet weather I/I rate to approximately 10-percent of that found in the EBMUD service district on average. At the same time, sitewide plumbing upgrades and water-saving systems have reduced LBNL's average sewer flows by over half. UC LBNL is working to further address the I/I on the Lab site. On September 30, 2009, UC LBNL issued a Sanitary Sewer System Management Plan (SSSMP), which guides the Facilities Division and the Environmental Health and Safety Division of UC LBNL in identifying, prioritizing, and continuously renewing and replacing sewer system facilities so as to maintain reliable service, and in cost-effectively minimizing infiltration and inflow. As described in the SSSMP, UC LBNL has established procedures for monitoring and evaluating infiltration and inflow (I/I), including guidelines for taking action to limit I/I. Groundwater infiltration and inflow (GWI/I) and rain-dependent infiltration and inflow (RDI/I) are quantified and monitored to ensure that the hydraulic capacity of the sanitary sewer collection system is not exceeded and to determine if I/I reduction projects should be initiated. UC LBNL also maintains design and construction standards, specifications, and details that ensure that new and rehabilitated sanitary sewer collection system infrastructure is designed and installed in compliance with the latest federal and state regulations, and is in line with general industry standards. The SSSMP contains a framework for implementing the recommendations made by EBMUD in view of the January 14, 2009 RWQCB order. When EBMUD has determined new flow allocation requirements and the schedule for implementation, the SSSMP will allow UC LBNL to react as necessary.
6	Building and Construction Trades Council of Alameda, AFL-CIO	The commenter states their support for the project.	Comment noted.
7	Committee to Minimize Toxic Waste - Sihvola	The commenter refers to controversy with respect to the site of the Proposed Action.	Comment noted. The proposed CRT project site does not include the upper Cafeteria Creek area once proposed for a parking lot, as cited by the commenter. As this area would not be affected by the Proposed Action, any discussion of impacts to this area is beyond the scope of this EA.

Comment #	Commenter	Comment Summary	Response
8	Committee to Minimize Toxic Waste - Sihvola	The commenter suggests that previously a more southern portion of the project site was considered for a building because of concerns related to landslides at the currently proposed site	See **Master Response 2– Site-Specific Geotechnical/Geologic Considerations,** which demonstrates that the CRT site is a geologically safe and suitable site for the proposed building, and that project construction would not trigger a landslide.
9	Committee to Minimize Toxic Waste - Sihvola	The commenter states that the site is located between the Hayward Fault and the edge of a collapsed caldera.	See **Master Response 1–Geological Conditions Underlying the LBNL Site**, which demonstrates that there is no collapsed caldera beneath the LBNL site. See **Master Response 2– Site-Specific Geotechnical/Geologic Considerations,** which discusses the stability of the project site. The project location with respect to the Hayward fault and the site's stability are also discussed in **subsection 4.2.1, Geology and Soils**, in the EA.
10	Committee to Minimize Toxic Waste - Sihvola	The commenter asserts that the caldera is filled with a mixture of mud, perched water, and boulders and that LBNL has not done a comprehensive hydrogeological study of its composition, nor provided hydrostratigraphic units. Comment asserts these would show hydraulic connection between various permeable layers of the sediment.	See **Master Response 1 –Geological Conditions Underlying the LBNL Site.** The site geology at the Proposed Action site is discussed in **Master Response 2– Site-Specific Geotechnical/Geologic Considerations** and **subsection 4.2.1, Geology and Soils,** in the EA. Master Response 1 provides a summary of existing geologic subsurface data. These data do not support the existence of a collapsed caldera filled with a mixture of mud and water. If such a weak structure did exist, the geomorphic expression of the area would most likely be a depression, rather than the prominent ridge that exists. Again, the CRT site is underlain by stable bedrock and is not underlain by volcanic rocks or a hypothetical collapsed caldera structure.
11	Committee to Minimize Toxic Waste - Sihvola	The commenter refers to a letter from Garniss H. Curtis that describes the potential for a catastrophic landslide at the project site following a major earthquake on the Hayward fault. The landslide is postulated to be a consequence of the project site being located on the side of a collapsed caldera.	See **Master Response 1–Geological Conditions Underlying the LBNL Site.** The project location with respect to the Hayward fault and the site's stability are also discussed in **Master Response 2– Site-Specific Geotechnical/Geologic Considerations** and **subsection 4.2.1, Geology and Soils**, in the EA.

Comment #	Commenter	Comment Summary	Response
12	Committee to Minimize Toxic Waste - Sihvola	The commenter refers to hazards and controversy of the Proposed Action site and asks if all of the private industry and public (State of California, UC, Department of Energy, etc.) financiers been adequately informed of what the comment characterizes as CRT's most unsuitable and dangerous location.	The hazards associated with the Proposed Action site are evaluated in **subsection 5.3, Hazards, Human Health, and Accidents** of the EA. Geological hazards are evaluated in **subsection 5.1, Geology and Soils.** Please also see **Master Responses 1 and 2**, which further demonstrate that the CRT site is a geologically safe and suitable site for the proposed building. Also, see **Master Response 7** regarding risk from wildland fires at the CRT site. NEPA and CEQA provide the appropriate mechanisms for informing federal and state decision makers of all environmental issues concerning a project. The DOE has been informed of the environmental issues associated with the proposed CRT location and alternative locations through the EA and the NEPA process, and The University of California Board of the Regents has been informed of the environmental impacts associated with the CRT project through the EIR and the CEQA process.
13	Committee to Minimize Toxic Waste - Sihvola	The commenter requests a list of entities financing the project.	The DOE would fund the relocation of its programs into the proposed facility. Construction of the facility would be funded by the University of California.
14	Committee to Minimize Toxic Waste - Sihvola	The commenter refers to history of landslides at the LBNL site and asserts that building construction has caused landslides at LBNL.	The geologic conditions at the project site are discussed in **subsection 4.2.1, Geology and Soils,** in the EA. See also **Master Response 2– Site-Specific Geotechnical/Geologic Considerations,** which demonstrates that the CRT site is a geologically safe and suitable site for the proposed building, and that project construction would not trigger a landslide
15	Committee to Minimize Toxic Waste - Sihvola	The commenter states that the document has not adequately described, analyzed, and considered all of the natural and man-made hazards present at the site and vicinity.	The hazards present at the LBNL site are described in **subsection 4.2.3, Hazards, Human Health, and Accidents** and the hazards associated with the Proposed Action site are evaluated in **subsection 5.3, Hazards, Human Health, and Accidents** of the EA. Geological hazards at the LBNL site are described in **subsection 4.2.1, Geology and Soils** and evaluated for the Proposed Action in **subsection 5.1, Geology and Soils.**
16	Committee to Minimize Toxic Waste - Sihvola	The commenter states that DOE failed to disclose the significant information related to a collapsed caldera.	See **Master Response 1–Geological Conditions Underlying the LBNL Site**. Also, the EA discloses geological hazards associated with the proposed project in **subsection 5.1, Geology and Soils.**
17	Committee to Minimize Toxic Waste - Sihvola	The commenter states that the proposed project does not assure safe, healthful surroundings because it is located next to the Hayward fault.	The EA evaluates geologic hazards associated with the proposed project, including its vicinity to the Hayward fault, in **subsection 5.1, Geology and Soils.** Also, see **Master Response 2 – Site-Specific Geotechnical/Geologic Considerations.**
18	Committee to Minimize Toxic Waste - Sihvola	The commenter states that the engineering of structures is insufficient to address the instability of the site.	All life-safety risks were assessed in the EA in **subsection 5.3, Hazards, Human Health, and Accidents,** and also described in **Master Response 7, Risk of Wildland Fire at the CRT Site,** and **Master Response 2 – Site-Specific Geotechnical/Geologic Considerations.**

Comment #	Commenter	Comment Summary	Response
19	Committee to Minimize Toxic Waste - Sihvola	The commenter states that the EA does not adequately address concerns related to soil and groundwater, that analysis of various cross-sections of the LBNL site is not possible without mapping of the sites hydrostratigraphic units, and that without this mapping, it is not possible to understand the movement of groundwater inside the caldera and how it could affect the CRT site.	The EA addresses environmental effects associated with soil and groundwater in **subsection 5.1, Geology and Soils,** and **subsection 5.2, Water Resources**. Also, see **Master Response 1–Geological Conditions Underlying the LBNL Site**. As discussed in **Master Response 1**, the hydrogeology of the LBNL site, including the CRT site, has been thoroughly investigated as part of LBNL's environmental restoration program. The hydrologic character of the site has been assessed and the vast amount of subsurface and surface geologic data does not support the existence of a large collapsed caldera structure, and certainly not one in the vicinity of or with any hydraulic conductivity to the CRT site. Therefore, movement of water within the hypothetical caldera during an earthquake is irrelevant.
20	Committee to Minimize Toxic Waste - Sihvola	The commenter states that an EIS should be prepared to address CMTW's concerns.	See **Master Response 3 – Decision to Prepare an Environmental Assessment.**
21	Committee to Minimize Toxic Waste - Sihvola	The commenter states that the EA did not include an adequate analysis of hazards from wildfires.	The EA discusses fire hazards at the LBNL site in **subsection 4.2.3, Hazards, Human Health and Accidents,** and evaluates wildland fire hazards in **subsection 5.3, Hazards, Human Health, and Accidents.** Also, see **Master Response 7** regarding risk from wildland fires at the CRT site.
22	Committee to Minimize Toxic Waste - Sihvola	The commenter is concerned with Seismic Phase 2 project and its approval by the DOE. The commenter has submitted the same set of comments that were previously submitted on the Seismic Phase 2 Project EA as comments on the current EA.	The comments submitted by CMTW on the Seismic Phase 2 project EA, which DOE carefully considered during the review of that project, are pertinent to that project and not the CRT project. To the extent that the Seismic Phase 2 EA comments relate to LBNL site-wide issues such as geologic hazards from proximity to the Hayward fault, or geologic instability due to a hypothetical caldera at the LBNL site, or the issue of wildland fire risks, those issues are addressed in **Master Responses 1, 2,** and **7** in this EA.
23	Committee to Minimize Toxic Waste - Sihvola	The commenter states that the Draft EA does not describe the gas main that would be relocated by the project. In light of the recent gas main related explosion in San Bruno, the commenter is concerned about potential explosion-related risk from the gas main.	Emergency response at the LBNL site is discussed in **subsection 5.3, Hazards, Human Health and Accidents**. See **Master Response 4- Gas Main Risk at CRT Site.**
24	Committee to Minimize Toxic Waste - Sihvola	The commenter states that an EIS should be prepared.	See **Master Response 3 – Decision to Prepare an Environmental Assessment.**

Comment #	Commenter	Comment Summary	Response
25	Committee to Minimize Toxic Waste - Sihvola	The commenter asks: 1. Does the natural gas pipeline serving the CRT site/area cross the Hayward Fault? If so, where? 2. Are there other natural gas pipelines serving the LBNL site that cross the Hayward Fault? If so, where? 3. When were these pipelines installed? 4. When were these pipelines last inspected and/or repaired or replaced? 5. What was the condition of the pipelines when last inspected or serviced? 6. Do they all have automatic shut-off valves? If so, where? 7. Do the gas lines crossing the Hayward Fault have automatic shut-off valves on both sides of the fault? 8. What are the pressures inside the gas pipelines? 9. An analysis of a worst-case scenario, following a natural gas pipeline explosion at the Hayward Fault, serving the CRT site, should be included in the EIS.	Emergency response at the LBNL site is discussed in **subsection 5.3, Hazards, Human Health and Accidents**. See **Master Response 4- Gas Main Risk at CRT Site.**
26	Committee to Minimize Toxic Waste - Sihvola	The commenter asks if LBNL natural gas pipelines located are in the same utility trenches as water, electricity and sewer lines? If so, the commenter requests an EIS analysis of a worst-case scenario of all pipes, exploding, as was the case in San Bruno. Analysis should include availability of water to fight the ensuing fire—if all the water lines were to be destroyed.	The natural gas main would not be relocated in the same trench as water, electricity or sewer. All of the utilities would be relocated to the north of the building site but would be in separate trenches. Safety would be improved with the installation of the new gas piping. The LBNL site is supplied with water from several locations so any damage to one area would not impact the entire site. Also, see **Master Response 4- Gas Main Risk at CRT Site** and **Master Response 3 – Decision to Prepare an Environmental Assessment.** Emergency response at the LBNL site is discussed in **subsection 5.3, Hazards, Human Health and Accidents**.

Comment #	Commenter	Comment Summary	Response
27	Committee to Minimize Toxic Waste - Sihvola	The commenter is concerned with water consumption of the cooling towers of 32 million gallons per year. Comment claims that LBNL rejected EBMUD's recommendation to build a satellite treatment system for recycled water at CRT. The commenter is also concerned with quantity of wastewater from LBNL and the aging of the sewer system in the City of Berkeley.	Water consumption for the proposed CRT facility is discussed in **subsection 5.11, Utilities and Waste Management,** in the EA**.** The water usage associated with the cooling towers is included in the water consumption projections for LBNL. EBMUD has indicated that it can serve future development at LBNL through 2025 with its existing water supply sources (Also see **Response to Comment #60** below). The project includes rainwater harvesting for irrigation and the use of the discharge from the cooling towers in restroom fixtures. In addition, a substantial portion of the cooling tower water would evaporate and not be dumped into the sewer system. The Proposed Action's sanitary sewers would be designed and built to prevent inflow and infiltration, which is the main concern expressed by EBMUD.
28	Committee to Minimize Toxic Waste - Sihvola	The commenter suggests that the CRT facility should be considered as an anchor facility at a second campus.	**Section 5.0, Environmental Consequences** and **Section 6.0, Cumulative Effects**, of the EA provide an analysis of the environmental effects from siting the proposed facility at three off-site locations in Berkeley and Richmond. The EA also includes a discussion about the feasibility of off-site construction. LBNL second site is in the early planning stage. No site has been evaluated or selected at this time and the earliest that a second site could potentially start construction would be in 2015. This timeline is infeasible for the proposed CRT facility. Furthermore, should the second site be located distant from the LBNL site or the UC Berkeley campus, it would not meet the purpose and need of the Proposed Action. As discussed in **Section 2.0, Purpose and Need** of the EA, the existing Oakland Scientific Facility does not have adequate computer room space, mechanical cooling space, or adequate electrical power to meet the purpose and need of the project. See **Master Response 5 - Purpose and Need of the Proposed Action and Alternatives.**
29	Committee to Minimize Toxic Waste - Sihvola	The commenter refers to an attachment submitted as part of the CRT Facility Draft EIR process.	The comments submitted as part of the CRT EIR process are provided in **Table 2, DOE's Responses to Draft EIR Comments,** included in this appendix (**Appendix 4**).
30	Nyingma Institute	The commenter is concerned that the CRT project will adversely affect the institute's residents and programs.	As explained in the EA **subsection 5.9 Noise** and in the responses to the Institute's detailed comments below, the Proposed Action would not adversely affect the Institute's participants and programs. In addition, Standard Project Features Noise-1a, 1b, and 4 are part of the Proposed Action ("SPFs"; see EA Appendix 1) These SPFs would minimize impacts from noise generated by the project's construction activities and noise from mechanical equipment that would be used at the CRT facility, including cooling towers and air handling equipment. Please see detailed responses below.

Comment #	Commenter	Comment Summary	Response
31	Nyingma Institute	The commenter cites the Berkeley Municipal Code Table 13.40-1, which states that the maximum noise level for residential uses is 60 dB(A) between hours of 7 AM and 10 PM, and 55 dB(A) from 10 PM until 7 AM. The Institute quotes the EA, saying that the average noise level at Hearst Avenue and Highland Place by the Nyingma Institute is 64 dB(A), with noise levels ranging from 57 to 80 dB(A). The Institute notes that the existing noise levels in the vicinity already exceed the maximum exterior noise levels for residential uses.	The Berkeley Municipal Code Table 13.40-1 presents the maximum exterior noise levels allowable for residential and commercial land uses. The City uses these noise levels to control the maximum noise from the operation of stationary equipment on one property from adversely affecting adjacent properties. The code (Berkeley Municipal Code Tables 13.40-3 and 4) also controls a project's construction site noise from affecting adjacent properties. The Berkeley Municipal Code excludes noise from vehicular traffic on public streets; the municipal code does not regulate a project's construction or operational traffic noise. The commenter cites EA noise measurements taken at the Hearst Avenue / Highland Place intersection as the noise level to which the Nyingma Institute is currently subjected. The commenter further asserts that this noise is generated "primarily from LBNL" and UC building mechanical systems. Noise measurements taken at the Hearst / Highland Place intersection are only representative of daytime noise conditions at the Nyingma Institute parking lot and façade facing Hearst Avenue. The Nyingma Institute is mostly screened by intervening buildings from much of the traffic noise generated on Hearst Avenue. As reported in Table 4.0-1 in the EA, based on noise measurements conducted on the northeastern side of the Nyingma Institute (the facade that faces the existing LBNL facilities and the CRT site), the ambient noise levels at the Institute are 48 dB(A) Leq with an Lmax of 57 dB(A). Based on field measurements, traffic is determined to be the dominant source of noise affecting the south-facing side of the Institute with some noise contributed by the HVAC systems at the nearby UC facilities and minimal to no contribution of noise from HVAC systems at LBNL facilities as these are too distant from the Institute to affect it. As shown in EA subsections 5.9 and 6.2.9, the project's operational traffic, or the project's traffic in combination with traffic from other projects, would not make an appreciable difference to those existing noise levels – the project's traffic would increase the ambient noise levels by less than 0.5 dB(A) (Illingworth & Rodkin 2010b). Other sources of operational noise associated with the Proposed Action (cooling towers and air handling units) would not add to the noise levels experienced by the south-facing facade of the Nyingma Institute because there would be no direct line of sight between those sources and the south-facing facade of the Institute and also because noise levels generated by the Proposed Action's stationary equipment would meet the City's ordinance requirements at the LBNL property line with the Institute (in accordance with SPF Noise-4) . Also see Response to Comments 34 and 35 below regarding noise from the Proposed Action's stationary equipment See **Response to Comment 33**, below regarding noise impacts from project construction traffic.

Comment #	Commenter	Comment Summary	Response
32	Nyingma Institute	The commenter refers to Table 13.40-2 in the City of Berkeley's noise ordinance and suggests that average interior noise levels are 49 dB(A), with noise levels ranging from 42 to 65 dB(A) as vehicle traffic fluctuates. The Institute states that existing interior noise levels already exceed maximum allowable noise values reported in this table.	As with Table 13.40-1, Table 13.40-2 in the Berkeley Municipal Code does not apply to noise levels generated by vehicular traffic. The project's operational traffic, or the project's operational traffic in combination with traffic from other projects, would not make an appreciable difference in regard to existing noise levels (an increase of 0.5 dB(A) or less). Noise from the Proposed Action's stationary equipment would not add to these interior noise levels for the reasons presented in **Response to Comment 31** above.
33	Nyingma Institute	The commenter finds that the noise currently experienced compromises its operations and expresses concern that added truck traffic and construction noise will compound this problem.	Construction truck traffic along Hearst Avenue that would result from concurrent projects at LBNL was analyzed in **subsection 6.2.9** of the EA. The analysis revealed that these cumulative truck trips would not result in a substantial increase in noise levels along Hearst Avenue (less than 1 dB(A) with an increase of up to 2 dB(A) on a peak day). The noise SPFs would limit noise related to construction trucks during construction of the proposed CRT facility. With respect to construction noise generated at the Proposed Action site, according to the Berkeley Noise Ordinance, construction activities lasting more than 10 days shall not produce noise in excess of 65 dB(A) on adjacent residential properties zoned R-3 during weekdays and in excess of 55 dB(A) during weekends and legal holidays. As the analysis on page 5.0-37 of the EA shows, for most of the construction period, construction noise levels that would be experienced at the Institute (R-3 property) and nearby Foothill student housing complex from construction activities at the CRT site would not exceed 65 dB(A), except for intermittent periods during the short duration of exterior finishing activities (4.5 months) when the project's construction noise levels are conservatively calculated to be 66 dB(A) at the Institute if all exterior finishing activities are occurring at the same time. A one dB(A) exceedance of the 65dB(A) threshold is indistinguishable from the existing noise levels. As described in **subsection 5.9, Noise**, these construction activities would be temporary and short in duration and because construction noise levels would fall within the range of existing ambient noise levels at the Institute, this is not considered an adverse effect.
34	Nyingma Institute	The commenter is concerned about operational noise from the HVAC equipment and cooling towers and requests more explanation.	The EA analyzed the HVAC and cooling tower noise at full buildout with five cooling towers in operation. The cooling towers would be located on the east side of the CRT building. The distance, topography, and building would effectively attenuate noise from the cooling towers that could otherwise potentially affect the Nyingma Institute or any other sensitive receivers in the community. With respect to HVAC noise, LBNL SPF Noise-4, which is incorporated into the Proposed Action, identifies the measures that will reduce noise from HVAC equipment so as to comply with the Berkeley noise ordinance limits. Detailed analyses completed by Charles M Salter Associates in July 2010 indicate that project would comply with the Berkeley noise ordinance limits at the Institute and other off-site residential receptors (Illingworth & Rodkin 2010b).

Comment #	Commenter	Comment Summary	Response
35	Nyingma Institute	The commenter questions that noise from operating cooling towers for the project will be unnoticeable. The commenter is also concerned about the noise levels from this equipment increasing with age.	LBNL SPF Noise-4, which is incorporated into the Proposed Action, identifies the measures that will reduce noise from HVAC equipment so as to comply with the Berkeley noise ordinance limits. Also please see Responses to Comments 33 and 34 above. The noise analysis in the EA considered the future full build out of the facility when it analyzed the noise impacts from computational equipment and its cooling needs.
36	Nyingma Institute	The commenter requests to reduce noise at the source and direct it away from residential uses.	Comment noted. Also please see **Responses to Comments 33** and **34** and LBNL SPF Noise-4 for a list of features that are incorporated into the project to control noise levels which would result in noise levels not exceeding the Berkeley noise ordinance limits at the LBNL property line. The UC LBNL commits to considering concerns expressed by its neighbors, including the Institute, and to work to identify mutually beneficial solutions which address concerns.
37	Nyingma Institute	The commenter suggests potential noise mitigation, including a sound wall to block construction noise, possible relocation of CRT and HVAC units on the new building to minimize the noise at the Nyingma Institute	Please see **Response to Comments #33** through **35** above.
38	Save Strawberry Canyon	The commenter states that the CRT has the potential to significantly affect the quality of the environment, that the DEA is insufficient, and there needs to be a full discussion of impacts and alternatives, and therefore an EIS is warranted.	See **Master Response 3 – Decision to Prepare an Environmental Assessment**, which explains why the preparation of an Environmental Assessment is appropriate for this Proposed Action, and what the procedures and criteria are required for the preparation of an EIS. The CRT EA is a complete and thorough analysis that fully complies with all applicable NEPA requirements. The EA analyzes and discloses the effects from the implementation of not just the Proposed Action but also five other alternatives, including three off-site alternatives.
39	Save Strawberry Canyon	The commenter states that the proposed site is not suitable for CRT. SSC also claims that an EIS is needed that provides a discussion of viable off-site alternatives.	As noted above, **Section 5.0, Environmental Consequences** and **Section 6.0, Cumulative Effects,** in the EA includes an evaluation of the impacts of developing the proposed facility at three off-site locations. See **Master Response 3 – Decision to Prepare an Environmental Assessment**,
40	Save Strawberry Canyon	The commenter states that the project site is a part of a continuous landscape that the organization is eager to preserve and protect.	The commenter's characterization of the site as being "notable for its stretch of natural terrain…." and of being "a visual resource of significance" is not supported by the first-hand site investigations conducted for the EA analysis. The project would be located in an area that is surrounded by other LBNL facilities on a site that has previously been disturbed in conjunction with road and utility construction. See **Master Response 6 - Visual Quality of the Proposed Action Site**.

Comment #	Commenter	Comment Summary	Response
41	Save Strawberry Canyon	The commenter states that if a building were constructed at the site, a visual resource of significance would be lost. Also, an associated biological resource would be lost. The cumulative effects of the development of the site must be analyzed.	**Subsection 5.6, Visual Resources** in the EA, describes the visual impacts from developing the CRT building at the proposed site. Biological and cumulative impacts of the Proposed Action are addressed in **subsection 5.4, Biological Resources** and **Section 6.0, Cumulative Effects**. See also **Master Response 6- Visual Quality of the Proposed Action Site**.
42	Save Strawberry Canyon	The commenter states that the previous concerns expressed with respect to the project should have been an indication to the DOE that this project needs a full assessment of impacts to resources.	See **Master Response 3 – Decision to Prepare an Environmental Assessment.**
43	Save Strawberry Canyon	The commenter states that the geology of the CRT site and its proximity to the Hayward fault is a concern. SSC asserts that the LBNL Helios Energy Research Facility project EIR was decertified due to the problem of colluvial material underneath the building footprint.	See **Master Response 1 - Geological Conditions Underlying the LBNL Site,** and **Master Response 2, Site-Specific Geotechnical Considerations.** The commenter's assertion as to why the EIR for the LBNL's Helios Energy Research Facility project was decertified is not accurate nor relevant to this EA. The Helios EIR was decertified because the project team concluded that the revision to project design was sufficiently substantial to warrant submittal of a revised design to the Regents for approval following analysis in and certification of a new EIR.
44	Save Strawberry Canyon	The commenter refers to **subsection 4.2, Issues Determined to Warrant Further Consideration in the EA.**	As the commenter notes, the EA does analyze geology and soil impacts for the proposed action and alternatives.
45	Save Strawberry Canyon	The commenter states that the geotech reports were not prepared for the project as proposed and more geotechnical investigations are needed which will prove that no building should be constructed on this site. An EIS must evaluate the reality of this site's conditions.	Site geology is discussed and analyzed in **subsections 4.2.1** and **5.1, Geology and Soils** in the EA. See **Master Response 2- Site-Specific Geotechnical/Geologic Considerations.** See **Master Response 3 – Decision to Prepare an Environmental Assessment.**
46	Save Strawberry Canyon	The commenter summarizes the WLA (William Lettis and Associates) peer review of the 2006 Kleinfelder fault investigation. The comment states that WLA is concerned with inadequate discussion of the shear zones and clay shear seams, their orientation, and their use in interpreting landslide versus faulting. Comment states that WLA noted that Kleinfelder wrote that no shear or offsets of the layers were observed in trenches. Comment claims that Kleinfelder and WLA do not agree and that Kleinfelder contradicts itself.	See **Master Response 2 –Site-Specific Geotechnical/Geologic Considerations.** Kleinfelder is not contradicting itself or contradicting WLA as the comment suggests. All questions raised by WLA have been adequately answered to the agreement of WLA. In fact, the initial paragraph in Kleinfelder's response letter to WLA's comments states, "WLA indicates that they are in agreement with our conclusions that active faulting does not exist beneath the CRT building site." WLA further states that the Kleinfelder study was performed adequately for the purposes of the proposed project and that "The study, as well as previous studies, document that the primary active fault zone of the Hayward fault lies west of the proposed CRT footprint."

Comment #	Commenter	Comment Summary	Response
47	Save Strawberry Canyon	The commenter states that two probes made by California Geological Survey indicate faults around or under the footprint of the project site.	Site geology is discussed and analyzed in **subsections 4.2.1** and **5.1, Geology and Soils** in the EA. See **Master Response 2 –Site-Specific Geotechnical/Geologic Considerations.** The Kleinfelder (2006) fault investigation includes Plate 6 that shows the general outline of previously performed fault studies in the vicinity of the proposed CRT project site. Kleinfelder reviewed the available information from CGS and verified that no probes or borings were performed by CGS at the project site.
48	Save Strawberry Canyon	The commenter suggests that there are problems with the Kleinfelder reports, including the map from the fault investigation, which marks and identifies borings, trenches, pits and other important material. 1. Comment finds that the Kleinfelder report does not discuss Fugro's seismic refraction study, or what it revealed of faults. 2. Comment states that GeoResource borings are included but not cited on the map, so are useless. 3. 2006 Blackberry Gate borings by Kleinfelder are shown on the map but are not mentioned in the reports. Comment notes that these were near or at the Proposed Action footprints. 4. There are no images or analyses for 2 Fugro trenches, which are close to the proposed building footprint.	Site geology is discussed and analyzed in **subsections 4.2.1** and **5.1, Geology and Soils** in the EA. See **Master Response 2 –Site-Specific Geotechnical/Geologic Considerations.**
49	Save Strawberry Canyon	The commenter states that Fugro borings in the northern part of the footprint are different from the borings by Kleinfelder. Specifically, the commenter finds that Fugro B-1 and B-2 show clay to 10 feet and to 15 feet then sandstone to the bottoms of both borings (27 feet). Kleinfelder No. 1 has clay to 7 feet, siltstone to 18 feet, then shale. KB-3 has siltstone to 9 feet, sandstone to 12 feet, siltsone to 27 feet and then shale. (KB-2 struck a concrete conduit.)	See **Master Response 2 –Site-Specific Geotechnical/Geologic Considerations.** It appears as though the comment by SSC mistakenly calls out Kleinfelder boring KB-3, rather than K-3.The lithologic differences between the various Fugro and Kleinfelder borings presented in Master Response 2 are consistent with the site conditions and what would be expected based on natural and man-made conditions at the specific boring locations.

Comment #	Commenter	Comment Summary	Response
50	Save Strawberry Canyon	The commenter notes that Kleinfelder proposed a design for a previous CRT facility that shows no interior piers or few piers for maximum flexibility. SSC finds that this may result in movement during a seismic event and sites to Moffitt Library as an example of a building constructed without interior walls that had to be reinforced at the corners. SSC suggests this reinforcement may not be enough to prevent the loaded floors from pancaking.	See **Master Response 2 –Site-Specific Geotechnical/Geologic Considerations.**
51	Save Strawberry Canyon	The commenter states that the piers should extend into "bedrock." Most piers depicted in the Kleinfelder report are less than 10 feet deep. In other parts of the report, the piers extend to the colluvium, the fill above the landslide. The landslide and the clay slip seam beneath it must be removed and replaced with a better quality fill, about 10 feet in depth. The SSC finds that the piers will not reach the siltstone and notes that siltstone is expansionary.	See **Master Response 2 –Site-Specific Geotechnical/Geologic Considerations.**
52	Save Strawberry Canyon	The commenter states that site grading for CRT would result in 60,000 cubic yards of cut and fill and the resultant truck trips would be between 6,000 and 4,000 round trips, resulting in noise and air impacts.	The EA presents the total amount of cut and fill on page 3.0-11, which is estimated at 15,500 cy of cut and 12,200 cy of fill for a total of 27,700 cy (and not 60,000 cy as erroneously estimated by the commenter). The truck trips associated with this cut and fill are also reported on page 3.011 and 3.0-12, and are substantially below the number estimated by the commenter. As noted in the EA, the total number of daily truck trips from all concurrent LBNL construction projects are controlled so as not to exceed 98 one-way truck trips per day. The noise, traffic, and air quality impacts from this number of daily truck trips were evaluated and are reported in the EA in **subsection 6.2.9, Noise, and subsections 5.7, Air Quality,** and **5.10, Transportation and Traffic**.
53	Save Strawberry Canyon	The commenter states that the slope stabilization and pier construction would cost as much as the building itself.	The location of the Proposed Action was chosen to best meet the Proposed Action's stated purpose and need, as well as to reasonably meet feasibility and budgetary considerations. See **Master Response 5 - Purpose and Need of the Proposed Action and Alternatives.**
54	Save Strawberry Canyon	The commenter states that the Draft EA does not describe the gas main that would be relocated by the project. In light of the recent gas main related explosion in San Bruno, the commenter is concerned about potential explosion-related risk from the gas main.	See **Master Response 4– Gas Main Risk at CRT Site.** The EA has been revised to provide a description of the gas line modifications and impacts (see **subsections 3.1.6, Utilities and Infrastructure**, and **4.2.11** and **5.11, Utilities and Waste Management).**

Comment #	Commenter	Comment Summary	Response
55	Save Strawberry Canyon	The commenter states that an EIS should be prepared.	See **Master Response 3 – Decision to Prepare an Environmental Assessment.**
56	Strawberry Creek Watershed Council - Schemmerling	The commenter states that the Draft EA is not adequate and an EIS should be prepared.	See **Master Response 3 – Decision to Prepare an Environmental Assessment.**
57	Strawberry Creek Watershed Council - Schemmerling	The commenter states that the EIS should include information about the 6-inch gas main and noise from the operation of cooling towers.	See **Master Response 4– Gas Main Risk at CRT Site.** With respect to operational noise, the noise levels resulting from the operation of on-site equipment such as cooling towers and HVAC are discussed in **subsection 5.9, Noise,** of the EA and **Response to Comment 34**. See **Master Response 3 – Decision to Prepare an Environmental Assessment.**
58	Strawberry Creek Watershed Council - Schemmerling	The commenter states that the EA must include water use and wastewater generation data, which should be reviewed by the appropriate agency.	The EA presents both the daily and annual water consumption associated with the proposed project in **subsection 3.1.6, Utilities and Infrastructure,** and discusses the ability of EBMUD to provide this water to the LBNL site in **subsection 5.11, Utilities and Waste Management,** of the EA. The project's water demand is well within the volume of water that EBMUD has committed to provide to LBNL from its existing supply sources. The EA also presents the total amount of wastewater that would be generated daily and on an annual basis by the proposed project in **subsection 3.1.6**. Impacts on EBMUD's treatment capacity are described in **subsection 5.11**. As the wastewater amounts generated by the project are within the capacity of the treatment facilities, the flows from the project would not adversely affect the waters of the Bay. Please note that EBMUD reviewed and commented on the Draft EA. EBMUD has not expressed any concern about the project's water consumption or wastewater generation (see **Comments 3** through **5)**.
59	Strawberry Creek Watershed Council - Schemmerling	The commenter states that the project is located on landslide prone soils in the Hayward fault zone.	See **Master Response 2- Site-Specific Geotechnical/Geologic Considerations**.
60	Strawberry Creek Watershed Council - Schemmerling	The commenter asks how the project will affect Cafeteria Creek, which contributes flows to Strawberry Creek.	**Subsection 3.1.6, Utilities and Infrastructure,** in the EA provides a description of how stormwater generated at the project site would be collected and discharged. Hydromodification effects are evaluated in **subsection 5.2, Water Resources.** The Proposed Action would not affect Cafeteria Creek. Storm water would be controlled and directed away from Cafeteria Creek and towards on-site retention facilities. After retention in these hydromodification vaults, the stormwater would be discharged into the storm drain in Cyclotron Road. The existing storm drain in Cyclotron Road discharges into the North Folk of Strawberry Creek. The runoff from the CRT site would discharge into the North Fork of Strawberry Creek, but because it would be detained and discharged at a rate such that the post development flows from the site approximate pre-development flows, the site runoff would not cause scour or erosion in the receiving waters.

Comment #	Commenter	Comment Summary	Response
61	Strawberry Creek Watershed Council - Schemmerling	The commenter notes that the Draft EA plans for the removal of the building after it becomes obsolete. Comment asks why construct a massive facility on such a steeply sloped, undeveloped site, to then have to remove it.	DOE's Recommendations for the Preparation of Environmental Assessments and Environmental Impact Statements (DOE 2004) recommend that an EA disclose the environmental consequences from the construction, operation, decommissioning and removal of a proposed project. It is in that context that the EA discusses the eventual closure and removal of the building and the foreseeable effects of these actions. The decommissioning and removal are not related to the proposed site specifically. As with any building that eventually becomes obsolete, the proposed building will require upgrading or removal. The removal or replacement of the project would occur no matter what site is eventually chosen for the proposed facility.
62	Strawberry Creek Watershed Council - Schemmerling	The commenter asks about the total construction budget for the project at the proposed site.	The proposed project's total construction budget is $75 million.
63	Strawberry Creek Watershed Council - Schemmerling	The commenter asks as to what the total construction budget would be for constructing the project at the alternate sites.	Although the Proposed Action and the alternatives meet DOE's purpose and need, the Proposed Action meets certain additional screening criteria that best suit DOE's NERSC programmatic goals (see EA **subsection 2.2.4**). Since the alternatives did not meet these additional screening criteria, the construction budgets for the alternative sites were not fully evaluated.
64	Strawberry Creek Watershed Council - Schemmerling	The commenter asks whether an independent review been done of the cost/benefit ratios of each alternative site.	Evaluation of the No Action alternative provides a baseline that a reader or the decision maker can use to make comparisons as to the environmental impacts for the Proposed Action and alternatives. Cost can be a factor of consideration in a NEPA document, but there is not a requirement to consider costs.
65	Strawberry Creek Watershed Council - Schemmerling	The commenter expresses concern about the public health effects of the proposed project and requests LBNL employee health data.	The comment is noted. It appears that this comment is beyond the scope of the EA, as the EA only evaluated the environmental impacts of hazards from the Proposed Action and alternatives at the LBNL site, RFS site, former DHS site and the San Pablo Avenue site – not the entire LBNL campus -- for which data is being requested by the commenter.
66	Bernardi (Committee to Minimize Toxic Waste) (Poster Session)	The commenter is concerned with how the poster session was noticed and how the meeting session was set up with no chairs.	Comment noted. DOE NEPA implementing regulations do not require a public meeting in the case of an EA. However, because DOE wishes to provide members of the public an opportunity to participate in the EA process, DOE provided a time for the public to ask questions and express concern. In addition, even though not required by the regulations, DOE allowed the public the opportunity to comment on the Draft EA for 30 days after issuance. (10 CFR 1021.301)

Comment #	Commenter	Comment Summary	Response
67	Bernardi (Committee to Minimize Toxic Waste) (Email)	The commenter states that the proposed project should not be located in Strawberry Canyon, next to dormitories and in the Alquist-Priolo Earthquake Zone. Proposed project should be located at an alternate site.	See **Master Response 5 – Purpose and Need of the Proposed Action and Alternatives.** Comment noted. The EA includes an evaluation of three off-site locations for the proposed facility and an alternate location on the LBNL site, as well as the No Action alternative.
68	Bernardi (Committee to Minimize Toxic Waste) (Email)	The commenter is concerned with disaster related to the gas and water lines near the project site. The commenter requests an EIS be prepared.	See **Master Response 4– Gas Main Risk at CRT Site** and **Master Response 3 - Decision to Prepare an Environmental Assessment.**
69	Curtis	The commenter is concerned with a map of planned construction on the LBNL hill campus and notes that one site on the west side of the existing buildings is on Great Valley Sequence Cretaceous beds. He notes that there are fine-grained sandstones interbedded with shale beds ranging from a few inches thick to a foot or more in thickness. The shale is composed of altered flakes of mica and silt grains. These beds at this locality dip westward at angles of 30 to 40 degrees as can be seen in outcrops in the gullies. The commenter notes that the slope is very steep, and there are numerous scars of small landslides from landslide debris having been washed away quickly.	See **Master Response 2 –Site-Specific Geotechnical/Geologic Considerations.**
70	Curtis	The commenter states that two factors are involved in causing the CRT site slope to be so steep: one is the slow uplift of the rocks on the east side of the Hayward fault, leaving a fault scarp, and the other is the steep westward dip of the strata composing the slope.	See **Master Response 2 –Site-Specific Geotechnical/Geologic Considerations.** Certainly, the slope is the result of uplift to the east of the Hayward fault. Maximum tectonic uplift rates throughout the Bay Area are thought be less than 1 mm/yr, or 1 m/thousand years (Ferritti et al. 2004), and these maximum rates do not occur at the project location. Scientifically, it would seem more logical that a rapid uplift rate would correspond to steep slopes rather than a slow uplift. Current research indicates that the west side of the Hayward fault is experiencing uplift relative to the east side in the vicinity of the project, which indicates the slope will not be steepened further by uplift (Williams 1992).
71	Curtis	The commenter states that slopes to the north and south of the CRT location are generally less steep than this one and goes on to note that this is unfortunate because it has been an initiation for homes to be constructed on them with inadequate support.	Comment noted. The construction of residences throughout slopes both north and south of LBNL is outside the scope of this environmental analysis.

Comment #	Commenter	Comment Summary	Response
72	Curtis	The commenter is concerned with the strength of the westward dipping shale rocks that the proposed building will rest on, particularly during a strong earthquake when the rocks are water-soaked. The commenter asserts there should be more suitable sites for the Proposed Action.	See **Master Response 2 – Site-Specific Geotechnical/Geologic Considerations.** Also, refer to **Master Response 5 - Purpose and Need of the Proposed Action and Alternatives.**
73	Eiseley	The commenter expresses opposition to the project.	Comment noted.
74	Eiseley	The commenter expresses concern about the risk associated with the caldera.	See **Master Response 1 – Geological Conditions Underlying the LBNL Site.**
75	Fairfield	The commenter refers to protecting Strawberry Canyon as a natural resource and alludes to destruction of vegetation and wildlife habitat. The commenter requests that an EIS be prepared.	Effects on vegetation and wildlife habitat associated with the Proposed Action are described in **subsection 5.4, Biological Resources**, in the EA. Please see **Master Response 3 – Decision to Prepare an Environmental Assessment**, which explains the process for determining whether and when an EIS becomes necessary for NEPA review of a Proposed Action.
76	Grassetti	The commenter refers to the risk associated with slope stability from building within the Alquist-Priolo Earthquake Hazard Zone.	A discussion of seismic landslide hazards at the project site is located in **subsection 5.1, Geology and Soils**, of the EA. Also see **Master Response 1 – Geological Conditions Underlying the LBNL Site,** and **Master Response 2 –Site-Specific Geotechnical/Geologic Considerations.**
77	Grassetti	The commenter states that the Richmond site is better suited for the proposed facility, without the risk factors inherent at the Proposed Action site.	See **Master Response 5- Purpose and Need of the Proposed Action and Alternatives.**
78	Grassetti	The commenter claims that the slope of sandstone and shale that underlies most of the buildings of the LBNL site is unstable because it is on the western edge of a caldera created 10 million years ago by volcanic eruption. Increased instability and landslides can be expected due to extreme weather events, including intense rainfall, related to climate change. The commenter provides an example of a storm that brought down trees and caused landslides in the North Hills and Berkeley Hills. Comment provides a weblink to a landslide hazard map at the LBNL site that shows historical and potential landslides. The commenter asserts that an extreme rainfall event could cause a catastrophic slide.	See **Master Response 1 – Geological Conditions Underlying the LBNL Site** and **Master Response 2 – Site Specific Geologic/Geotechnical Conditions.**

Comment #	Commenter	Comment Summary	Response
79	Grassetti	The commenter notes that the Proposed Action site lies within the Alquist-Priolo Earthquake Fault Zone. Comment notes that an earthquake of magnitude 6.8 to 7.0 is increasingly probable on the Hayward fault within the next 30 years and that a large earthquake could cause earth flows down onto Foothill housing and beyond that into the City of Berkeley.	See **Master Response 1 – Geological Conditions Underlying the LBNL Site** and **Master Response 2 - Site-Specific Geotechnical/Geologic Considerations**.
80	Grassetti	The commenter asserts that there would be a fire risk at the Proposed Action site due to inadequate firefighting capabilities.	See **Master Response 7 – Risk of Wildland Fire at the CRT Site**. As noted by the commenter, FEMA funding is sought by UC Berkeley for controlling an area overgrown with eucalyptus trees on UC Berkeley managed land. Such areas at LBNL have already undergone vegetation management, with support provided by DOE. In addition, UC Berkeley does not have the on-site firefighting resources that LBNL maintains, including an on-site fire station and multiple 200,000-gallon water tanks for fire suppression purposes. Thus, the commenter's characterization of LBNL's firefighting capabilities as being the same as UC Berkeley's is not correct, nor is it accurate to compare the wildland fire risk at the entire LBNL site with one area of UC Berkeley managed wildlands.
81	Grassetti	The commenter states that an EA review is not robust enough for a project of this size, especially considering cumulative impacts. The comment cites examples of cumulative projects such as FEMA PDM-PJ-CA-2005-003 and -001, PDM-PJ-CA-2006-004, HMGP 1731-16-34, and the EBRPD Measure CC projects (State Clearinghouse #2008042099). `	See **Master Response 3 – Decision to Prepare an Environmental Assessment.** The FEMA projects referred to by the comment are described in subsection Vegetation Management Projects, in **subsection 6.1, Construction Projects Near the Proposed Action**. The analysis in the EA considered these projects in its cumulative analysis. Specifically, the cumulative effects related to wildland fire are described in **subsection 6.2.3, Hazards, Human Health, and Accidents**. The East Bay Regional Parks District (EBRPD) Wildfire Hazard Reduction and Resource Management Plan provides for treatment of vegetation in Tilden Regional Park, which is also near the LBNL site.
82	Grassetti	The commenter states that an EIS is needed to fully evaluation environmental risks of the Proposed Action and Alternatives.	See **Master Response 3 – Decision to Prepare an Environmental Assessment**.
83	Hakimoglu	The commenter expresses opposition to the project	Comment noted.
84	Hovland	The commenter refers to the risk associated with slope stability from building within the Alquist-Priolo Earthquake Hazard Zone.	A discussion of seismic landslide hazards is located in **subsection 5.1, Geology and Soils** of the EA. Please see **Master Response 2 - Site-Specific Geotechnical/Geologic Considerations.**

Comment #	Commenter	Comment Summary	Response
85	Hovland	The commenter claims that the slope of sandstone and shale that underlies most of the buildings of the LBNL site is unstable because it is on the western edge of a caldera created 10 million years ago by volcanic eruption. Increased instability and landslides can be expected due to extreme weather events, including intense rainfall, from climate change. The commenter provides an example of a storm that brought down trees and caused landslides in the North Hills and Berkeley Hills. The commenter provides a weblink to a landslide hazard map at the LBNL site that shows historical and potential landslides. The commenter asserts that an extreme rainfall event could cause a catastrophic slide.	See **Master Response 1 – Geological Conditions Underlying the LBNL Site** and **Master Response 2 - Site-Specific Geotechnical/Geologic Considerations.**
86	Hovland	The commenter notes that the Proposed Action site lies within the Alquist-Priolo Earthquake Fault Zone. Comment notes that an earthquake of magnitude 6.8 to 7.0 is increasingly probable on the Hayward fault within the next 30 years. A large earthquake could cause earth flows down onto Foothill housing and beyond that into the City of Berkeley	See **Master Response 1 – Geological Conditions Underlying the LBNL Site** and **Master Response 2 - Site-Specific Geotechnical/Geologic Considerations.**
87	Hovland	The commenter refers to constructing within the Alquist-Priolo Earthquake Fault Zone, and asserts that the building would experience a high degree of shaking and damage, and could break apart, even if constructed to today's earthquake standards.	See M**aster Response 2- Site-Specific Geotechnical/Geologic Considerations**. The potential environmental effects related to seismic shaking are described in **subsection 5.1, Geology and Soils**.
88	Hovland	The commenter refers to wildland fire risk in the Berkeley Hills.	See **Master Response 7 – Risk of Wildland Fire at the CRT Site.**
89	Hovland	The commenter expresses concern regarding fire spreading to hazardous waste facilities and abandoned buildings that contain contaminated materials.	The proposed CRT facility is not a hazardous waste facility, nor would it store hazardous materials that are not properly contained. See **subsection 5.3, Hazards, Human Health, and Accidents**, for a description of hazardous materials associated with the Proposed Action. See **Master Response 7 – Risk of Wildland Fire at the CRT Site.**
90	Hovland	The commenter is concerned about risk of fire from grassland.	See **Master Response 7 – Risk of Wildland Fire at the CRT Site.**

Comment #	Commenter	Comment Summary	Response
91	Hovland	The commenter describes the cumulative development in Strawberry and Blackberry Canyons.	The EA evaluates cumulative impacts of growth in the area surrounding the Proposed Action and alternative sites in **Section 6.0, Cumulative Effects**. Effects related to water supply are also described in that section.
92	Hovland	The commenter refers to protecting Strawberry Canyon as a natural resource and alludes to destruction of vegetation and wildlife habitat.	Comment noted.
93	Hovland	The commenter states that the facility should be sited at alternative sites in Berkeley, Oakland or Richmond.	See **Master Response 5- Purpose and Need of the Proposed Action and Alternatives.**
94	Hovland	The commenter expresses a concern about the relationship between town and gown.	Comment noted.
95	Hovland	The commenter states that an EIS should be prepared.	See **Master Response 3 – Decision to Prepare an Environmental Assessment.**
96	Legg	The commenter refers to dangers from earthquakes and landslides at the project site.	See **Master Response 2 - Site-Specific Geotechnical/Geologic Considerations.**
97	Legg	The commenter is concerned with the choice of site.	See **Master Response 5 – Purpose and Need of the Proposed Action and Alternatives** and **Master Response 2 –Site-Specific Geotechnical/Geologic Considerations.**
98	Matis	The commenter states that consolidation of the various programs at the project site would reduce the traffic in Berkeley and therefore would reduce global warming. The comment is in support of the project.	Comment noted.
99	Miller	The commenter states that construction in Strawberry Canyon is unsafe. Comment expresses opposition to the project.	The hazards associated with the Proposed Action site are evaluated in **subsection 5.3, Hazards, Human Health, and Accidents** of the EA. Geological hazards are evaluated in **subsection 5.1, Geology and Soils.** See also **Master Response 1 – Geological Conditions Underlying the LBNL Site.**
100	Miller	The commenter generally refers to unstable ground, fire, earthquake and limited access near the location for the Proposed Action.	Comment noted.
101	Sarachan	The commenter states that the project site is dangerous. Comment is concerned with potential gas line rupture.	See **Master Response 4– Gas Main Risk at CRT Site.**

Comment #	Commenter	Comment Summary	Response
102	Sarachan	The commenter notes that a sub-grade-6-inch medium-pressure natural gas main crosses the project site. The commenter claims that this is a fact of major significance. 1. Comment disagrees with conclusion in the EA that potential effects related to seismicity, landslides and erosion is "minor" 2. The gas main is subject to extreme movement/shock. 3. Soils supporting the gas main are potentially shifting and unstable shale and sandstone and are subject to settling.	See **Master Response 2 – Site-Specific Geotechnical/Geologic Considerations** and **Master Response 4– Gas Main Risk at CRT Site.**
103	Sarachan	The commenter states that an EIS should be prepared.	See **Master Response 3 – Decision to Prepare an Environmental Assessment.**
104	Sarachan	The commenter refers to an attachment submitted as part of the CRT Facility Draft EIR process.	The comments submitted as part of the CRT EIR process are provided in the **DOE's Responses to Draft EIR Comments,** included in this appendix.
105	Scott	The commenter notes disagreement with conclusion in EA that environmental impacts of the Proposed Action would be "minor."	Comment noted. The NEPA review is a process in which environmental impacts are assessed and agency and public comments are also taken into consideration before the decision maker decides whether the impact is indeed minor. Also see **Master Response 3 – Decision to Prepare an Environmental Assessment.**
106	Scott	The commenter refers to the traffic impacts from the addition of 300 employees to the LBNL site due to the proposed project.	The EA evaluates the effects of employee traffic in **subsection 5.10, Transportation and Traffic** in the EA. As shown in the analysis, traffic associated with the CRT facility would not cause an exceedance of the significance thresholds for traffic impacts established by the City of Berkeley. As discussed in **subsection 3.1.8, Project Population,** all 300 employees would not be new to the LBNL site. Approximately 165 persons would be existing LBNL employees currently located in other LBNL buildings; these persons already travel to the lab by car or transit and therefore would not result in new vehicles trips.
107	Scott	The commenter is concerned with the earthquake threat at Proposed Action site.	See **Master Response 2 – Site-Specific Geotechnical/Geologic Considerations.**
108	Scott	The commenter disagrees with the purpose of the project.	See **Master Response 5 – Purpose and Need of the Proposed Action and Alternatives.**

Comment #	Commenter	Comment Summary	Response
109	Scott	The commenter disagrees with the finding that the impact from tree removal will be minor.	**Subsections 4.2.4** and **5.4, Biological Resources,** of the EA present the type of habitat that exists on the project site. The eucalyptus trees are not native trees and are also highly flammable. The annual grassland on the site is also composed of non-native species. The removal of this vegetation would reduce the fire risk in the area. With respect to the potential for erosion following the clearing of trees, the cleared area would be developed with the building and roadway. Any areas not under paved surfaces would be landscaped. Erosion control measures would be put in place during project construction to avoid and minimize erosion. The EA acknowledges that the removal of site trees would result in some loss of carbon sequestration. However, the proposed project would replace the non-native eucalyptus trees with native trees at a 1:1 ratio.
110	Scott	The commenter states that an EIS should be prepared.	See **Master Response 3 – Decision to Prepare an Environmental Assessment.**
111	Sharp	The commenter requests that the EA comment period should be extended and another public information session should be considered.	DOE NEPA implementing regulations require DOE to provide state government and tribes 14 to 30 days to review and comment an EA. Here, DOE provided the full 30 days for comment review. In addition, while DOE regulations do not require consultation with the general public on EAs, DOE not only invited the public to review and comment on the EA but also provided an opportunity for the public to attend a information poster session which was conducted on September 20, 2010.
112	Taylor	The commenter expresses opposition to the project.	Comment noted.
113	Thompson	The commenter states that the CRT building would loom over the commenter's neighborhood and that Strawberry Canyon is being overbuilt.	The CRT site is not in Strawberry Canyon. The proposed CRT building would not be visible from Strawberry Canyon, nor from most or all surrounding residential neighborhoods. Consequently, DOE disagrees with the commenter's assertion that the CRT building would be viewed as "looming over" the commenter's – or any neighboring – residences, particularly those in Strawberry Canyon. Visual resources are evaluated in **subsection 5.6, Visual Resources** in the EA. Also see **Master Response 6 – Visual Quality of the Proposed Action Site.**
114	Thompson	The commenter states that the project site is too close to the Hayward fault. Also the site is in an area that will likely experience seismic ground failures that would affect homes downslope.	See **Master Response 2 – Site-Specific Geotechnical/Geologic Considerations.**
115	Thompson	The commenter notes that the Leased Facility on San Pablo appears to be the most reasonable alternative.	See **Master Response 5- Purpose and Need of the Proposed Action and Alternatives.**
116	Woodcock	The commenter expresses opposition to the project.	Comment noted.

Comment #	Commenter	Comment Summary	Response
117	Woodcock	The commenter is concerned with buildings near the Hayward Fault, ecologically sensitive area, and potential for slides.	A discussion of seismic landslide hazards at the project site is located in **subsection 5.1, Geology and Soils** of the EA. The site biology is evaluated in **subsection 5.4, Biological Resources.** Also, see **Master Response 2 – Site-Specific Geotechnical/Geologic Considerations.**

DOE's Responses to CRT Draft EIR Comments

Comment #	Comment Summary	UC EIR Response	DOE Response
Letter from Committee to Minimize Toxic Waste on the CRT Draft EIR			
1	The commenter is concerned with the size of the facility and the location near the Hayward fault, within the Alquist-Priolo Earthquake Fault Zone, the steepness of the hillside, and accessibility of the site.	The Draft EIR identifies the project's location relative to the Hayward fault and within the associated Alquist-Priolo Zone (see Section 4.5, Geology and Soils, page 4.5-4). Project site access is described in Section 3.0, Project Description, and emergency access and evacuation routes are discussed in Section 4.6, Hazards (pages 4.6-12 to 4.6-13).	See **Master Response 2 – Site-Specific Geotechnical/Geologic Considerations.** In addition, emergency access and evacuation routes are discussed in **subsections 4.2.3** and **5.3, Hazards, Human Health, and Accidents**.
2	The commenter requests that the NERSC Center remain at the Oakland Scientific Facility site in Oakland.	The NERSC facility in Oakland does not meet the following programmatic requirements: (1) provide an integrated and appropriately designed facility for advanced research in computational science and engineering; (2) foster interaction and collaboration between the project and UC Berkeley programs; (3) provide adequate space to accommodate next-generation computing equipment and allow for regular upgrades to such equipment; and (4) provide a reliable power source for the project's computer equipment needs. The NERSC facility does not have the electrical capacity to allow for it to remain in Oakland beyond the current lease and lifetime of current equipment, which is due to be replaced in 2009, and again in 2011. Next-generation computer equipment scheduled to be installed at that time to allow research programs to continue would require more electricity than is available at the current site.	See **Master Response 5 – Purpose and Need of the Proposed Action and Alternatives.**

Comment #	Comment Summary	UC EIR Response	DOE Response
3	The commenter requests consideration of the Richmond Field Station site for all UC/LBNL Computational Science and Engineering Program facilities.	The Richmond Field Station was evaluated and eliminated as an option because it does not meet the CRT project objectives to expand functionality of Lab facilities, provide for cross-disciplinary research, or foster collaborative work environments among researchers. The Richmond site does not provide accessibility to a large, reliable, and economical electrical power source. Please see **Master Response No. 1, Alternative Site – Richmond Field Station**.	The EA evaluates environmental effects from developing the CRT facility at the Richmond Field Station site throughout **Section 5.0, Environmental Consequences**. Also, see **Master Response 5 – Purpose and Need of the Proposed Action and Alternatives.**
4	The commenter states that the Proposed Action site is "virgin land" in the Strawberry Creek Watershed and should be preserved. Cafeteria Creek should be preserved and improved.	As noted in **Response to Comment ORG-1-2** above, although the specific location within the LBNL campus in which the CRT project is proposed is currently undeveloped, the site is not virgin land. It has been previously disturbed and is predominantly vegetated with non-native eucalyptus trees. The site is in an area of the hillside that is developed with institutional and laboratory buildings of various scales interspersed with groupings of native and non-native trees and grassland. The proposed project would not include any structures or grading within Cafeteria Creek and would include a 50-foot setback from the creek for construction activities (see Draft EIR page 3.0-19). The proposed project would not drain to the open channel of Cafeteria Creek (above Cyclotron Road).	Although the specific location within the LBNL campus in which the CRT project is proposed is currently undeveloped, the site is not virgin land. It has been previously disturbed and is predominantly vegetated with non-native eucalyptus trees. The site is in an area of the hillside that is developed with institutional and laboratory buildings of various scales interspersed with groupings of native and non-native trees and grassland. The proposed project would not include any structures or grading within Cafeteria Creek and would include a 50-foot setback from the creek for construction activities, as stated in **Section 3.0** of the EA. The proposed project would not drain to the open channel of Cafeteria Creek (above Cyclotron Road).

Comment #	Comment Summary	UC EIR Response	DOE Response
5	The commenter states that the Draft Environmental Impact Report (EIR) is deficient with regard to addressing earthquake and landslide hazards. CMTW and other community groups expressed these concerns during the CEQA process for the Building 49 project.	LBNL disagrees with the statement that the CRT Draft EIR is deficient with regard to addressing potential hazards related to landslides and earthquakes. Geologic and seismic hazards are discussed in Section 4.5, Geology and Soils. With regard to comments previously submitted for the earlier proposed B49 project, the commenter's October 31, 2003 letter addresses a different project from the presently proposed CRT project and does not include comments on the adequacy of the present CRT Draft EIR, and all of the environmental topics raised in the letter are addressed in the Draft EIR for the CRT project. The letter is included in the material that will be made available to The Regents for their review and consideration of the CRT EIR.	Comments regarding the Bldg. 49 project do not address the Proposed Action, its alternatives, or the adequacy of the EA, thus no further response is warranted. The EA does address concerns regarding geology. See **Master Response 2– Site-Specific Geotechnical/Geologic Considerations,** which demonstrate that the CRT site is a geologically safe and suitable site for the proposed building, and that project construction would not trigger a landslide.
6	The commenter refers to comments given at a scoping meeting and the Draft EIR for the Building 49 project.	The attachments included as part of the comment letter will be included as part of the record and made available to the decision makers prior to a final decision on the proposed project. The scoping comments were all considered in the preparation of this EIR. The attachments relating to the prior project proposed on this site will be part of the record for consideration of this project, but do not specifically relate to the environmental issues relating to this project.	Those comments referred to by the commenter address the CEQA process; as they are not comments on the NEPA document, they are beyond the scope of the EA.

Comment #	Comment Summary	UC EIR Response	DOE Response
7	Commenter submits the report, "Contaminant Plumes of the Lawrence Berkeley National Laboratory and their Interrelation to Faults, Landslides and Streams in Strawberry Canyon, Berkeley and Oakland, California." Commenter requests inclusion of this report and responses to the report in the CRT Final EIR.	The Final EIR will include reproduction of all Draft EIR comments received during the official comment period. Because voluminous appendices and attachments were also submitted by various commenters, the CRT Final EIR may include an accompanying compact disk that holds these large attachments. Hard copies of the attachments as well as the accompanying compact disks will be presented along with all other relevant EIR materials to the UC Regents for their review and consideration of the CRT EIR.	DOE has reviewed the commenter's report. UC LBNL has reviewed the materials in Attachment 7, referred to herein as the commenter's report. The commenter's report includes the assertion that LBNL hill site geologic conditions have been overly simplified by UC LBNL, and that wells monitoring contaminant plumes have not been placed in the right locations along faults, landslides, and old creek beds. The commenter's report concludes that the extent of migration of on-site contaminants will continue to be underestimated. The commenter's report recommends that a conservative approach should be taken by LBNL to resolve these issues. This approach should include, among other things: an outside scientific technical review group to oversee UC LBNL plume monitoring strategy; factors present in the commenter's report that influence groundwater flows should be mapped in a three dimensional model; and, further investigation of faults, geology, and landslides in Strawberry Canyon should be conducted. DOE disagrees with the commenter's report in regard to its characterization of UC LBNL's management and monitoring of on-site conditions. All areas of the LBNL hill site where groundwater and soil contamination is present have been evaluated, the contamination characterized, and remedial systems installed to remediate those conditions as appropriate. UC LBNL has followed a very rigorous State mandated process to investigate and remediate soil and groundwater contamination wherever present. That process involves a detailed analysis of the geology in the area of suspected contamination. The detailed analysis includes investigation for the presence of faults, landslides, bedrock contact surfaces, historic creek beds, or any other condition that would influence the rate and direction of contaminant migration.

Comment #	Comment Summary	UC EIR Response	DOE Response
			Further, the analysis includes development of three-dimensional models to characterize pathways for contaminants that may potentially move under various probable scenarios. This information was also used to determine the location of monitoring wells. The process was performed under the direction and approval of soil and groundwater cleanup experts from DTSC, RWQCB, and City of Berkeley. The results of monitoring are reported to these agencies on an annual basis. If the monitoring results show the need for further evaluation of site conditions, UC LBNL will conduct such an evaluation, with oversight provided by the DTSC, RWQCB, and the City of Berkeley. See **Master Response 1- Geological Conditions Underlying the LBNL Site** for additional information on geological conditions of the LBNL hill site.
8	The commenter refers to a map that compiles fault mapping overlaid with epicenters that have occurred in Strawberry Canyon over the last 40 years. Comment states that there is evidence that additional faults other than the Hayward fault should be considered active.	Section 4.5 of the Draft EIR includes a discussion of seismic risks related to the proposed project's location near the Hayward fault. The Hayward fault is the only active fault in the vicinity of Strawberry Canyon that is recognized by registered Geologists, Geotechnical Engineers and the California Geologic Survey (CGS). The presence of other fault traces within the Berkeley Hills is not relevant to the CRT EIR. None of the secondary fault features on the commenter's referenced figure crosses the CRT site. The Draft EIR recognized that a portion of the CRT site lies within the Alquist-Priolo zone for the Hayward fault (see page 4.5-2), and, as required, a fault trace study of the site was conducted. As stated in the Draft EIR (page 4.5-11), this study found no active fault traces at the project site, and therefore potential impacts due to fault rupture are less than significant.	Please see **Master Response 2 – Site-Specific Geotechnical/Geologic Considerations.** Please also see **subsections 4.2.1** and **5.1, Geology and Soils**, of the EA for a description of faults in the vicinity of the Proposed Action and alternative sites.

Comment #	Comment Summary	UC EIR Response	DOE Response
9	The commenter refers to other maps to supplement supposed inadequacies of the CRT Draft EIR.	Please see **Response to Comment ORG-2-7**, above. The maps attached by the commenter represent conditions of LBNL as a whole, and do not appear to highlight any additional potential impacts of the CRT project that were not already addressed in the Draft EIR. In fact, the figures support statements in the Draft EIR that: (1) the CRT site is located in a landslide prone area (see page 4.5-3); (2) There are no active faults on the CRT site (see page 4.5-11); and (3) the CRT site does not overlie an area of groundwater contamination (see page 4.7-7).	The request to include additional documents is noted. The commenter has not identified specific comments within the documents therefore DOE is unable to respond to the information provided in the documents. Please see **Master Response 1 - Geological Conditions Underlying the LBNL Site,** and **Master Response 2, Site-Specific Geotechnical Considerations.**

Comment #	Comment Summary	UC EIR Response	DOE Response
10	The commenter states that there is possibility that the federal government might close LBNL.	There is no plan for the Department of Energy (DOE) to close Lawrence Berkeley National Laboratory, and the possibility of any such closure at this time is entirely speculative. The current LBNL management contract between the UC Regents and DOE is due to expire on May 31, 2010. The contract includes an award term provision that permits the DOE to extend the contract unilaterally until May 31, 2025. The initial award term extension is for three years and would extend the contract to May 31, 2010; thereafter, extensions are in one-year increments. DOE has advised UC that it has met the performance criteria for the initial three-year extension but is completing some agency internal administrative matters before extending the term of the contract. Future one-year extensions will be determined annually. LBNL is a federally funded research and development center for which DOE has ground leases of UC land independent of the UC management contract and outright ownership of nearly all structures and facilities. The terms of many of the ground leases extend beyond the maximum term of the existing laboratory management contract between DOE and UC. At the conclusion of the current contract DOE will either re-bid the contract or, pursuant to statutory authority, enter into a sole source contract with UC or some other contractor. Regardless, the ground leases will remain. There is a very low likelihood that the DOE would stop funding LBNL. The CRT building will not be located on land currently leased to DOE. A small part of the project site (on which it is anticipated that a footbridge and some mechanical equipment will be located) is on land currently leased to DOE that will be the subject of an anticipated lease-line adjustment. No legacy contamination is known to exist at the CRT project site, which has not previously had a building or other structure located on it.	The CRT building will not be located on land currently leased to the DOE. A small part of the project site (on which it is anticipated that a footbridge and some mechanical equipment will be located) is on land currently leased to the DOE that will be the subject of an anticipated lease-line adjustment. No legacy contamination is known to exist at the CRT project site, The proposed site for the CRT has not had a building or other structure located on it. Comments requesting information about land parcels other than where the CRT would be located are outside the scope of this EA. Speculation about what would happen should the federal government close LBNL is beyond the scope of this EA. The EA does address what would happen at the end of the useful life of the building; see **subsection 1.1, Proposed Action**.

Comment #	Comment Summary	UC EIR Response	DOE Response
11	The commenter asks that the NERSC Center stay in Oakland and that the Richmond Field Station site be considered for all future UC and non-DOE funded future projects to mitigate traffic and diesel exhaust impacts.	As stated in the comment, the proposed CRT project, together with other planned future development, would result in significant impacts on traffic and transportation. The Draft EIR identifies impacts and proposed improvements to mitigate these impacts to less than significant levels or lessen the magnitude of impacts. These mitigation measures range from physical improvements such as installation of new signals to enhancing the existing Transportation Demand Management (TDM) program at LBNL that would increase the number of employees and visitors who would not drive their vehicles to the site. The comment and the opinions of the commenter will be included as part of the record and made available to the decision makers prior to a final decision on the proposed project.	Please see **Master Response 5 – Purpose and Need of the Proposed Action and Alternatives.** **Subsection 5.7** of the EA compares air quality impacts due to traffic for several alternatives, including the Proposed Action and the Richmond Field Station sites. **Subsection 5.10** of the EA compares traffic impacts for these alternatives.
12	The commenter requests that more development not be undertaken in the Strawberry Canyon watershed. Comment requests planning to save maximum amount of students and Berkeley residents when Hayward fault ruptures.	The commenter's assessment of the Strawberry Creek watershed area is noted. The proposed CRT project is consistent with development anticipated and analyzed in the Lab's 2006 Long Range Development Plan EIR as well as in the analysis undertaken in the CRT EIR.	Comment with respect to wanting no more development in the Strawberry Creek watershed is noted. LBNL has an extensive emergency response and contingency plan (**subsection 5.3, Hazards, Human Health, and Accidents)** to address potential problems that could result in the event that there is fault rupture along the section of the Hayward fault near the LBNL site.
13	The commenter claims that public concerns (expressed during scoping period for the Draft EIR) were not adequately taken into consideration in the CRT Draft EIR.	Please see **Response to Comment ORG-2-7**, above regarding the inclusion of attachments. The public scoping process for the CRT Draft EIR is discussed in Section 1.0, Introduction (page 1.0-5). Any scoping comments received on environmental topics to be covered in the Draft EIR are summarized at the beginning of each relevant topical section and are addressed in the analysis contained within that section.	Those comments referred to by the commenter were addressed as part of the CEQA process; as they are not comments on the NEPA document, they are beyond the scope of the EA.

Comment #	Comment Summary	UC EIR Response	DOE Response
Letter from Laurie Brown and Jonathon Fernandez on the CRT Draft EIR			
14	Commenter questions the need for a "computer storage facility" at the Proposed Action site and finds that LBNL should consider other sites in West Berkeley and the East Bay in general. Comment questions need for physical proximity among the researchers, and suggests use of teleconferencing and desktop sharing services.	As discussed in the CRT Draft EIR, the CRT facility would not be simply a "computer storage facility" but an "integrated and appropriately designed facility that would allow for the continued operation and future advancement of the Berkeley Lab's NERSC High Performing Computing national users facility, Computational Research Division and joint Berkeley Lab/UC Berkeley Computational Science & Engineering programs." It would integrate office and meeting space with the computing infrastructure, and put this facility in close proximity to reliable and adequate power sources and other LBNL facilities, researchers, and amenities. With regard to the need for proximity, see **Master Response No. 1, Alternative Site – Richmond Field Station**.	See **Master Response 5 – Purpose and Need of the Proposed Action and Alternatives.** The purpose and need for the Proposed Action is also discussed in **Section 2.0, Purpose and Need,** in the EA.

Comment #	Comment Summary	UC EIR Response	DOE Response
15	Comment suggests that the Proposed Action is a "computer storage facility" and is concerned with emergency access in the event of an earthquake, wildfire, flood.	As discussed in the CRT Draft EIR, the CRT facility would not be simply a "computer storage facility" but an "integrated and appropriately designed facility that would allow for the continued operation and future advancement of the Berkeley Lab's NERSC High Performing Computing national users facility, Computational Research Division and joint Berkeley Lab/UC Berkeley Computational Science & Engineering programs." It would integrate office and meeting space with the computing infrastructure, and put this facility in close proximity to reliable and adequate power sources and other LBNL facilities, researchers, and amenities. In response to the commenters' suggestion that the project should be located elsewhere, please see **Master Response No. 1, Alternative Site – Richmond Field Station**. In addition to the two-lane Cyclotron Road mentioned in the comment, the LBNL Campus, including the proposed CRT site, is also served by the Strawberry Canyon and Grizzly Peak gates that are accessed from Centennial Drive. As stated in the comment, the Draft EIR has identified impacts and proposed potential improvements to mitigate these impacts to less than significance levels or lessen the magnitude of impacts.	See **Master Response 5 – Purpose and Need of the Proposed Action and Alternatives** for a discussion of alternative addressed in the EA. Fire hazards, and emergency response, including evacuation routes, are described in **subsection 5.3, Hazards, Human Health, and Accidents**. Please also see **Master Response 2 – - Site-Specific Geotechnical/Geologic Considerations** and **Master Response 7 – Risk of Wildland Fire at the CRT Site.**

Comment #	Comment Summary	UC EIR Response	DOE Response
16	The commenter questions the reasons behind evaluating off-site alternative locations in the EIR. Commenter also questions project objectives under CEQA that require physical proximity of researchers.	With regard to the need for proximity, see **Master Response No. 1, Alternative Site – Richmond Field Station**.	The EA does compare a number of off-site locations. See **Section 1.0** of the EA for a summary of impacts of the Proposed Action and the alternatives. See also **Master Response 5 – Purpose and Need of the Proposed Action and Alternatives** for a discussion of alternatives addressed in the EA. **Section 2.0, Purpose and Need,** includes a discussion about the need for proximity of researchers.
17	Commenter is concerned about availability of utility infrastructure at the Proposed Action site, including availability of power in the event of outages, wildfire vulnerabilities, and water delivery. Comment is also concerned with on-site cogeneration of power.	Section 4.6, Hazards and Hazardous Materials identifies the emergency response plan for the CRT project. In the event of an emergency on the project site, including a wildland fire, earthquake or landslide, the Berkeley Lab would implement the Master Emergency Program Plan (MEPP), which establishes policies, procedures, and an organizational structure for responding to and recovering from a major disaster at the Berkeley. The emergency evacuation plan for the Lab includes provisions for vehicular and pedestrian evacuation, in various scenarios where vehicular access to the site may be limited (see Section 4.6, Hazards and Hazardous Materials).	**Subsection 3.1.6, Utilities and Infrastructure** in the EA discusses the utilities and infrastructure proposed for the Proposed Action site. The environmental effects associated with utilities are addressed in **subsection 5.11, Utilities and Waste Management.** Fire hazards, and emergency response, including evacuation routes, are described in **subsection 5.3, Hazards, Human Health, and Accidents**. Cogeneration was an optional component of the proposed project analyzed in the EIR. This component is no longer included in the Proposed Action. Also, see **Master Response 4- Gas Main Risk at CRT Site.**

Comment #	Comment Summary	UC EIR Response	DOE Response
17 (cont.)		The Lab is concerned with the ability of the utility infrastructure to withstand natural disasters. Water and gas lines on the project site would be subject to design review by the East Bay Municipal Utility District (EBMUD) and Pacific Gas & Electric Company (PG&E) prior to project construction, which would minimize the vulnerability of these lines to rupture in the event of an earthquake. Current building code standards generally include requirements for flexible joints and connections to reduce the risk of rupture. The Draft EIR found less than significant impacts associated with water demands and energy requirements for the proposed project and found that project-level mitigation would not be required (see Section 4.13, Utilities, Service Systems, and Energy.) In addition, the utility lines outside the Lab management boundary (such as EBMUD for water, PG&E for natural gas transport and electricity, and the City of Berkeley for sanitary sewer and storm drains) could be degraded in the event of an earthquake or other natural disaster. The Lab would obtain confirmation of the integrity of utility lines from the respective utilities in order to continue operation following a major disaster. It would be speculative to analyze provisions for these services to the project site in the event of a natural disaster, in comparison to other sites in the area. No further analysis is required.	

Comment #	Comment Summary	UC EIR Response	DOE Response
18	The comment discusses Table 5.0-4 in the EIR. Commenter is concerned with cumulative impacts, especially with respect to traffic.	As stated in the comment, the Draft EIR identifies the project's impacts at a number of study intersections as significant and unavoidable under Cumulative conditions (pages 5.0-30 through 5.0-34). These intersections would operate at an unacceptable LOS E or LOS F regardless of the proposed CRT project and the proposed project (by itself or combined with Helios) would increase total intersection volumes by less than five percent. Although the significance criteria for the Draft EIR require that a project increase total intersection volumes at an intersection already operating at an unacceptable LOS E or LOS F by more than five percent, this Draft EIR conservatively concluded that the project's contribution to these intersection impacts would be significant and requires the implementation of LRDP Mitigation Measures TRANS-1a through 1d (page 5.0-32). These mitigation measures require LBNL to contribute fair share of the cost for potential improvements and to implement an enhanced Transportation Demand Management (TDM) program.	The comment regarding the table in the EIR is noted. With respect to the EA, cumulative effects of the Proposed Action are evaluated in **Section 6.0, Cumulative Effects**. Cumulative traffic effects are described in **subsection 6.2.10, Transportation and Traffic.**
19	The commenter requests consideration of off-site alternatives and suggests that a construction cost comparison of those sites and the proposed action be included in the EA.	Alternative project locations are discussed in Section 6.0, Alternatives. CEQA does not require analysis or comparison of project financial feasibility. In general, the comment expressed the opinion of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed project.	The EA evaluates environmental effects from developing the CRT facility at several alternative sites that are described in **subsection 3.2, Alternatives to the Proposed Action.** The environmental effects of the Proposed Action and alternatives are evaluated in the EA. The comment with respect to financial resources is noted.

Comment #	Comment Summary	UC EIR Response	DOE Response
20	Comment is concerned with protecting visual resources, special historic, cultural resources and wildlife habitat at the Proposed Action site.	The setting in which the project is proposed is neither wilderness nor public open space. The site is located within the larger context of an existing federally managed laboratory campus with limited public access. While mature stands of trees appear between structures, historically before European settlement, the hillside was covered in grasslands with tree cover only in riparian areas. Existing vegetation on site is predominantly introduced eucalyptus species. However, rather than return the hillside to pre-settlement patterns, the LBNL LRDP seeks to maintain the heavily vegetated appearance of the campus, and a one-to-one replacement of trees removed is required. With regard to the presence of a cultural landscape, please see **Master Response No. 3, Strawberry Canyon Cultural Landscape Claims**.	The affected environment and environmental consequences of the Proposed Action are described in the EA. Biological resources are evaluated in **subsections 4.2.4** and **5.4, Biological Resources**, are evaluated in **subsections 4.2.5** and **5.5**, and visual resources are evaluated in **subsections 4.2.6** and **5.6**. In addition, DOE has completed an informal consultation with the USFWS and found that there is no potential for adverse effect on whipsnakes. See also **Master Response 6 – Visual Quality of the Proposed Action Site**
21	Comment is concerned with environmental effects of the Proposed Action and cumulative development on rare, sensitive, threatened or candidate species. Comment is also concerned with the Helios project.	The biological impacts associated with the project's footprint were evaluated in Section 4.3, Biological Resources. As noted in the LRDP Principles and Strategies in the section, the Lab seeks to "Preserve and enhance the environmental qualities of the site as a model of resource conservation and environmental stewardship." The project would comply with applicable Department of Fish and Game Code, in addition to all other federal, state and local regulations and policies meant to reduce potential impacts to wildlife.	As discussed in **subsection 5.4, Biological Resources**, the Proposed Action has incorporated LBNL SPFs that would prevent the incidental taking of the Alameda whipsnake and would prevent effects on active maternity bat roosts. In addition, DOE has completed an informal consultation with the USFWS and found that there is no potential for adverse effect on whipsnakes. As discussed in **subsection 6.2.4, Biological Resources,** these SPFs would be incorporated in all LBNL projects, and best management practices would be incorporated in UC Berkeley projects, which would minimize cumulative impacts on sensitive biological resources. The Helios project is beyond the scope of the EA.

Comment #	Comment Summary	UC EIR Response	DOE Response
21 (cont.)		As discussed in the Draft EIR (4.3-13 to 4.3-14), no special-status plant species are expected to occur on the project site. While the project site is located adjacent to existing development and is dominated by non-native plant species, there is some potential that on-site habitats could provide nesting habitat for raptors and other special-status species. The implementation of the avoidance and mitigation measures incorporated into the Draft EIR would prevent the direct loss of any special-status wildlife. Additionally, the Draft EIR (page 4.3-3) concludes that the loss of wildlife habitat (including trees and other vegetation) from project implementation would be less than significant. This conclusion is supported by the fact that the habitat types to be impacted by the project are abundant in the project region. Eucalyptus groves and non-native grasslands are abundant on LBNL and surrounding areas, including areas that are accessible to any displaced wildlife. Therefore, given that the direct loss of special-status species would be avoided through incorporated measures and that similar habitat would still occur in abundance in surrounding and accessible areas, the project-related habitat loss does not meet any of the Significance Criteria defined in the Draft EIR (see page 4.3-21). The required replacement of all trees to be removed would further minimize the small habitat loss associated with the proposed project. The remainder of the comment appears to address the proposed Helios project and is not a comment on the CRT Draft EIR. The CRT project is not a component of the Helios project and would not include any Helios program functions. In general, the comment expressed the opinion of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed project.	

Comment #	Comment Summary	UC EIR Response	DOE Response
22	Comment is concerned with the exhaust system and potential effects on birds and bats, and the increased night lighting and its effects on nocturnal birds.	The proposed CRT Facility would be constructed adjacent to existing buildings on the LBNL campus. While the larger trees on the project site do provide potential raptor nesting habitat, the potential use of these trees by raptors is already limited by the proximity of existing development and associated uses. Therefore, the construction of an additional building adjacent to existing developed uses, as well as the introduction of a new noise source would not substantially worsen an already compromised condition for raptors and other wildlife. The air intakes would be screened to prevent entry by birds and other animals. In regards to lighting, the proposed project has been designed not to include light spillage into the open space located to the south of the project site or other nearby sensitive habitats.	The proposed CRT Facility would be constructed adjacent to existing buildings on the LBNL site. While the larger trees on the project site do provide potential raptor nesting habitat, the potential use of these trees by raptors is already limited by the proximity of existing development and associated uses. Therefore, the construction of an additional building adjacent to existing developed uses, as well as the introduction of a new noise source would not substantially worsen an already compromised condition for raptors and other wildlife. The air intakes would be screened to prevent entry by birds and other animals. In regards to lighting, the proposed project has been designed to avoid light spillage into the open space located to the south of the project site or other nearby sensitive habitats. Biological resources at the Proposed Action site are discussed in **subsections 4.2.4** and **5.4**, **Biological Resources.**

Comment #	Comment Summary	UC EIR Response	DOE Response
23	The comment addresses a statement in the EIR about Alameda whipsnake. The comment is concerned with the proximity of the coastal scrub habitat to the Proposed Action site.	As discussed in the Draft EIR (4.3-6), coastal scrub habitat occurs approximately 25 feet to the south of the project site. This coastal scrub area is and would continue to be separated from the project site by a fence and steep slopes. These features prevent human entry from the project site to the area of coastal scrub habitat in question. Additionally, the area of coastal scrub habitat is currently located near developed uses, including Cyclotron Road, paved parking areas, and buildings. There are also cooling towers on a neighboring building. Therefore, the proposed project would not substantially increase the level of development (and associated noise) near the coastal scrub habitat. Following development of the project site, it would be considered highly unlikely that Alameda whipsnake would move onto the project site given the absence of suitable habitat. Further, given the degree of development and the absence of accessible coastal scrub habitat to the north, east, and west of the project site, it is not expected that Alameda whipsnake would disperse across the project site.	As stated in **subsection 5.4**, **Biological Resources,** Alameda whipsnake habitat includes coastal scrub vegetation and open space grasslands, which occurs along south-facing slopes to the south of the Proposed Action site, outside of the project boundary. Environmental effects associated with the Alameda whipsnake are discussed in **subsection 5.4, Biological Resources.** In addition, DOE has completed an informal consultation with the USFWS and found that there is no potential for adverse effect on whipsnakes.
24	Comment asserts that the project purpose statement is incorrect and that the EIR has not demonstrated that the project cannot be constructed at another environmentally less damaging site.	The Lab disagrees with the commenter's assertion that the project objectives make the site under consideration a defined purpose of the project itself. The objectives do not reference any particular site, but they do appropriately reference such factors as the importance of convenient access by researchers and access to a large and reliable source of electric power. Please see **Master Response No. 1, Alternative Site – Richmond Field Station**.	See **Master Response 5 – Purpose and Need of the Proposed Action and Alternatives.** The adequacy of the EIR, however, is beyond the scope of the EA.

Public Agency Comments

BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT
SINCE 1955

ALAMEDA COUNTY
Tom Bates
(Vice-Chairperson)
Scott Haggerty
Jennifer Hosterman
Nate Miley

CONTRA COSTA COUNTY
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(Secretary)
David E. Hudson
Mark Ross
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Liz Kniss
Ken Yeager

SOLANO COUNTY
James Spering

SONOMA COUNTY
Shirlee Zane
Pamela Torliatt

Jack P. Broadbent
EXECUTIVE OFFICER/APCO

October 15, 2010

Kim Abbott
Department of Energy
Office of Science
Berkeley Site Office
Lawrence Berkeley National Laboratory
1 Cyclotron Road, MS 90-1023
Berkeley, CA 94720

Subject: Draft Environmental Assessment for Computational Research and Theory Facility Project

Dear Mr. Abbott:

Bay Area Air Quality Management District (District) staff reviewed the Department of Energy's (DOE) Draft Environmental Assessment (EA) for the Computational Research and Theory Facility Project (Project). Staff understands that the DOE has already completed CEQA review for this Project and is now completing documents for NEPA review. The Project would relocate and expand existing Lawrence Berkeley National Laboratory (LBNL) activities to a facility on or near the LBNL site. The Project would entail the construction of a 140,000 square foot building or the renovation of an existing building.

The EA determined that there would be no potential significant impacts, including no impacts due to greenhouse gas (GHG) emissions, from the Project. This determination was not based on BAAQMD thresholds because the Project analysis began before the BAAQMD Board of Directors adopted these thresholds on June 2, 2010.

BAAQMD staff understands that the DOE intends to require the Project to meet LEED Gold standards, implement an employee transportation demand management program and to procure energy from energy sources that exclude coal through the Western Area Power Administration (WAPA). However, the Project will still have a large energy demand and associated GHG emissions.

Staff urges the DOE to commit to all possible steps to minimize these impacts. In order to further reduce the Project's GHG emissions, staff recommends that DOE commit to the following additional measures as a condition of Project approval:

- Adding on-site renewable energy sources, such as wind, solar panels, or other alternative energy technology, and committing to powering a specific percentage of the Project with this renewable energy source.
- Meeting LEED Platinum green building standards.
- Employing the most energy-efficient computer servers, and using server consolidation and virtualization as possible.

Please contact BAAQMD's engineering staff to determine if any permits are needed for potential new stationary source equipment at 415-749-4990 or http://www.baaqmd.gov/Divisions/Engineering/Application-Forms.aspx.

District staff is available to assist DOE staff in addressing these comments. If you have any questions, please contact Alison Kirk, Senior Environmental Planner, at (415) 749-5169.

Sincerely,

Jean Roggenkamp
Deputy Air Pollution Control Officer

cc: BAAQMD Vice-Chairperson Tom Bates
BAAQMD Director Scott Haggerty
BAAQMD Director Jennifer Hosterman
BAAQMD Director Nate Miley

REC'D OCT 15 2010

EAST BAY
MUNICIPAL UTILITY DISTRICT

October 13, 2010

Kim Abbott, NEPA Document Manager
Department of Energy, Berkeley Site Office
Lawrence Berkeley National Laboratory
One Cyclotron Road, MS 90-1023
Berkeley, CA 94720

Re: Notice of Availability of a Draft Environmental Assessment for the Computational Research and Theory Facility Project, Lawrence Berkeley National Laboratory

Dear Mr. Abbott:

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the Draft Environmental Assessment for the Computational Research and Theory Facility Project located at the Lawrence Berkeley National Laboratory (LBNL) in the Oakland/Berkeley Hills. EBMUD's written comments to the Notice of Preparation of an EA dated January 13, 2010 (see enclosure) still apply.

If you have any questions concerning this response, please contact David J. Rehnstrom, Senior Civil Engineer, at (510) 287-1365.

Sincerely,

David J Rehnstrom

FOR William R. Kirkpatrick
Manager of Water Distribution Planning Division

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Enclosure

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EAST BAY
MUNICIPAL UTILITY DISTRICT

January 13, 2010

Kim Abbott, NEPA Document Manager
Department of Energy, Berkeley Site Office
Lawrence Berkeley National Laboratory
One Cyclotron Road, MS 90-1023
Berkeley, CA 94720

Re: Notice of Preparation of a National Environmental Policy Act Environmental Assessment for the Computational Research and Theory Facility Project, Lawrence Berkeley National Laboratory

Dear Mr. Abbott:

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the Notice of Preparation of a National Environmental Policy Act (NEPA) Environmental Assessment for the Computational Research and Theory (CRT) Facility Project located at the Lawrence Berkeley National Laboratory (LBNL) in the Oakland/Berkeley Hills. EBMUD provided written comments to LBNL on the Draft Environmental Impact Report (EIR) for the CRT Facility Project under the California Environmental Quality Act (CEQA) on January 3, 2008 (see enclosure) and understands that the project is now in the NEPA process. EBMUD has the following comments.

GENERAL

The Notice of Preparation states that the Department of Energy has a need to move the CRT Facility Project from its present downtown Oakland location to LBNL or other unidentified alternative site(s). EBMUD's comments on the Draft EIR for the CRT Facility Project were incorporated into the Final EIR under CEQA; these still apply and should be incorporated into the NEPA Environmental Assessment.

WASTEWATER

EBMUD's Main Wastewater Treatment Plant (MWWTP) and interceptor system are anticipated to have adequate dry weather capacity to treat the proposed wastewater flows from this project, provided that the wastewater meets the requirements of the current EBMUD Wastewater Control Ordinance. However, wet weather flows are a concern. EBMUD has historically operated three Wet Weather Facilities to provide treatment for high wet weather flows that exceed the treatment capacity of the MWWTP. On

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January 14, 2009, due to Environmental Protection Agency's and the State Water Resources Control Board's (SWRCB) re-interpretation of applicable law, the Regional Water Quality Control Board (RWQCB) issued an order prohibiting further discharges from EBMUD's Wet Weather Facilities. Additionally, on July 22, 2009 a Stipulated Order for Preliminary Relief issued by Environmental Protection Agency, the SWRCB, and RWQCB became effective. This order requires EBMUD to begin work that will identify problem inflow/infiltration areas, begin to reduce inflow/infiltration through private sewer lateral improvements, and lay the groundwork for future efforts to eliminate discharges from the Wet Weather Facilities.

Currently, there is insufficient information to forecast how these changes will impact allowable wet weather flows in the individual collection system subbasins contributing to the EBMUD wastewater system, including the subbasin in which the proposed project is located. As required by the Stipulated Order, EBMUD is conducting extensive flow monitoring and hydraulic modeling to determine the level of flow reductions that will be needed in order to comply with the new zero-discharge requirement at the Wet Weather Facilities. It is reasonable to assume that a new regional wet weather flow allocation process may occur in the East Bay, but the schedule for implementation of any new flow allocations has not yet been determined. In the mean time, it would be prudent for the lead agency to require the project applicant to incorporate the following measures into the proposed project: (1) replace or rehabilitate any existing sanitary sewer collection systems to reduce inflow/infiltration and (2) ensure any new wastewater collection systems for the project are constructed to prevent inflow/infiltration to the maximum extent feasible. Please include such provisions in the environmental documentation for this project.

If you have any questions concerning this response, please contact David J. Rehnstrom, Senior Civil Engineer, at (510) 287-1365.

Sincerely,

William R. Kirkpatrick
Manager of Water Distribution Planning Division

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Enclosure

EAST BAY
MUNICIPAL UTILITY DISTRICT

January 3, 2008

Jeff Philliber, Environmental Planner
Lawrence Berkeley National Laboratory
Environmental Planning Group
One Cyclotron Road, MS 90J0120
Berkeley, CA 94720

Re: Draft Environmental Impact Report for the Computational Research and Theory Facility, Lawrence Berkeley National Laboratory

Dear Mr. Philliber:

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the Draft Environmental Impact Report (EIR) for the Computational Research and Theory (CRT) Facility located at the Lawrence Berkeley National Laboratory (LBNL) in the Oakland/Berkeley Hills. EBMUD has the following comments.

WATER SERVICE

EBMUD's Shasta and Berkeley View Pressure Zones currently serve the existing LBNL facilities. If additional water service is needed, the project sponsor should contact EBMUD's New Business Office and request a water service estimate to determine costs and conditions for providing additional water service to the existing parcels. Engineering and installation of water services requires substantial lead-time, which should be provided for in the project sponsor's development schedule.

WATER RECYCLING

EBMUD recommends adding the following discussion regarding Water Recycling in Section 4.13 -- Utilities, Service Systems, and Energy of the EIR:

EBMUD's Policy 8.01 requires that customers use non-potable water for non-domestic purposes when it is of adequate quality and quantity, available at reasonable cost, not detrimental to public health and not injurious to plant life, fish and wildlife to offset demand on EBMUD's limited potable water supply. Based on the Draft EIR, the CRT facility would require approximately 29.3 million gallons per year, or

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80,300 gallons per day (gpd) at buildout for potable and cooling water. The proposed project would generate wastewater from restrooms and cooling tower blowdown. The combined wastewater source would generate on average approximately 6,000 gpd, with up to 21,000 gpd during peak periods, at buildout. Depending on the irrigation demands at the project site, the CRT facility could be a potential candidate for recycled water through a satellite treatment system. The combined wastewater source could be treated through a satellite treatment system to be located in the vicinity of the CRT facility to meet irrigation demands, thereby offsetting demands for potable and cooling water. EBMUD recommends that LBNL coordinate the development of this project closely with EBMUD to determine the feasibility of providing recycled water to the project area.

WATER CONSERVATION

EBMUD recommends adding the following discussion regarding Water Conservation in Section 4.13 -- Utilities, Service Systems, and Energy of the EIR:

The proposed project presents an opportunity to incorporate water conservation measures. EBMUD would request that LBNL include requirements for the project to incorporate WaterSmart technology and design standards in the landscape and building design. At a minimum the landscape design should be designed to a water budget as described in the State Model Water Efficient Landscape Ordinance in Division 2, Title 23, California Code of Regulations, Chapter 2.7, sections 490 through 495. Provisions should be established to monitor the water budget for compliance after project completion. EBMUD reviews applications for new standard water services and applications for expanded service for compliance with EBMUD Water Service Regulation Section 31, Water Efficiency Requirements. Although the Draft EIR indicates that no new or expanded water service connections would be needed to serve the project, implementation of Section 31 water efficiency requirements for nonresidential service is recommended. Section 31 requirements identify specifications for toilets, urinals, showerheads, lavatory and kitchen faucets, cooling towers, commercial refrigeration, outdoor landscaping and irrigation. EBMUD recommends that LBNL coordinate the development of this project closely with EBMUD to incorporate the most water efficient appliances and fixtures practical, even if not specifically noted in Section 31. Note that some of EBMUD's Section 31 requirements exceed the Uniform Plumbing Code requirements. EBMUD staff would appreciate the opportunity to meet with applicant's staff. A key objective of this discussion will be to explore timely opportunities to expand water conservation via early consideration of EBMUD's conservation programs and best management practices applicable to the project.

If you have any questions concerning this response, please contact David J. Rehnstrom, Senior Civil Engineer, at (510) 287-1365.

Sincerely,

William R. Kirkpatrick
Manager of Water Distribution Planning Division

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