

Mitigation Measure or Environmental Protection Practice	Question(s) for Checklist	Responsible for Implementation	When Implemented
AESTHETICS AND VISUAL QUALITY			
<p>LRDP MM AES-1: The University shall develop and implement a Physical Design Framework that protects the visual quality of both the on- and off-campus environments through provisions that address building scale, materials, and color schemes. The Physical Design Framework shall include best management practices and procedures for avoiding or minimizing aesthetic nuisances in demolition, construction, and operational phases of the project. Design review processes for planning of new buildings and development shall be clearly articulated and followed throughout the life of the project.</p> <p>Increased RBC scale and density would be addressed in a number of ways through the Physical Design Framework and subsequent plans: buildings would be restricted in height and height zones would further restrict heights in certain locations. Building facades would be broken up by architectural and design features so as to minimize the appearance of mass and bulk. Reflective material would be restricted, which, would minimize the appearance of the new buildings particularly at greater distances. Trees and other landscaping features would be used to further break up, obscure, or minimize RBC development. Aesthetically objectionable appurtenances such as stacks, machinery, tanks, and HVAC systems on top of buildings would be sheltered from view wherever practical. Demolition debris and long-term construction supplies and equipment would be stored such that – to the extent practicable – they would not be visually intrusive from off-site viewpoints.</p>	<ul style="list-style-type: none"> a) Has a Physical Design Framework been adopted and implemented? b) Have design review processes in the Physical Design Framework been followed through the life of the project? c) Does the project conform to the Physical Design Framework with regard to building height? d) Are architectural features and design employed to reduce the appearance of mass and bulk? e) Has use of reflective material been minimized in the building exterior? f) Do landscape features help minimize RBC development? g) Would planned appurtenances be sheltered from view? h) Have demolition and construction supplies and equipment been stored in a manner that reduces visual intrusion from off-site viewpoints? 	<p>Lead: Dev Dir With: PEP, CP, CLA</p>	<p>P, W, C, O</p>
<p>LRDP ENVIRONMENTAL PROTECTION PRACTICE AES-3a: Lighting for new development projects could be designed to include shields and cut-offs that minimize light spill onto unintended surfaces and minimize atmospheric light pollution.</p>	<ul style="list-style-type: none"> a) Has project lighting been designed with shields and cut-offs? 	<p>Lead: Dev Dir With: CP</p>	<p>P</p>
<p>LRDP ENVIRONMENTAL PROTECTION PRACTICE AES-3b: To reduce off-site lighting impacts, lighting at the campus could be restricted to areas where it would be required for safety, security, and operation. Exterior lights could be hooded, and lights could be directed on-site so significant light or glare would be minimized. For areas where lighting is not required for normal operation, safety,</p>	<ul style="list-style-type: none"> a) Is lighting at the campus restricted to areas required for safety, security and operations? b) Are exterior lights hooded and directed? c) Are switched lighting circuits employed where 	<p>Lead: Dev Dir With: CP, CLA, PD</p>	<p>P, O</p>

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or security, switched lighting circuits could be provided, allowing these areas to remain dark at most times, minimizing the amount of lighting potentially visible off-site. In parking lots, lights could be equipped with motion sensors that reduce the lights to half of their brightness when no motion is detected.	possible? d) Are motion sensors employed to reduce lighting in parking lots?		
LRDP ENVIRONMENTAL PROTECTION PRACTICE AES-3c: As part of the design review procedures, light and glare could be given specific consideration, and measures could be incorporated into the project design to minimize both. In general, exterior surfaces would not be reflective; architectural screens and shading devices are preferable to reflective glass.	a) Has lighting been considered in design review, with consideration of reducing light and glare?	Lead: Dev Dir With: PEP	P
AIR QUALITY			
LRDP MM AIR-2: When the University has developed 1,000,000 square feet of building space on the RBC site, before approving the construction of another building, the University shall prepare and implement an operational emissions minimization program that will be composed of campus-wide programs to minimize emissions from mobile and area sources, and project-specific emissions control measures, based on project-specific analysis, to minimize emissions from area and stationary sources.	a) Has the University developed 1,000,000 square feet of building space under the RBC LRDP? (If Yes, continue to b) and j), if No, see next measure)	Lead: Dev Dir, With: EH&S, P&T	P, O
<u>Campus-wide Control Measures</u>	b) If 1,000,000 square feet of building space under the RBC LRDP has been developed, has the University prepared an operational emissions minimization program to minimize emissions from area and stationary sources?		
Campus-wide programs would include, but not be limited to, the following:	c) Has a TDM program been implemented? d) Does the TDM program include preferential carpool/vanpool parking; secure bike parking; showers and changing facilities; transit subsidies Guaranteed Ride Home Program; and information to employees and students regarding alternative transportation modes? e) Are additional measures such as car share services; free transit passes; parking cash-out; daily parking charge; employee telecommuting program; compressed work schedules; infrastructure that		
<ul style="list-style-type: none"> Implement an enhanced TDM program to minimize vehicular traffic. The TDM program shall include the continued implementation of existing TDM measures such as provision of preferential carpool/vanpool parking; secure bike parking; showers and changing facilities; transit subsidies Guaranteed Ride Home Program; and information to employees and students regarding alternative transportation modes. The TDM program will be expanded, following an evaluation of campus population and trip generation, to incorporate additional measures such as car share services; free transit passes; parking cash-out; daily parking charge; employee 			

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<p>telecommuting program; compressed work schedules; infrastructure that allows employees to interact or conduct meetings and business without traveling; and a dedicated transportation coordinator.</p> <ul style="list-style-type: none"> • Convert campus fleet to low-emission, alternative fuel, and electric vehicles over time. • Use electric equipment for landscape maintenance. • Implement an educational program for faculty and staff and distribute information to students and visitors about air pollution problems and solutions. • Develop centralized utilities such as a central plant (in place of individual boilers in buildings). 	<p>allows employees to interact or conduct meetings and business without traveling; and a dedicated transportation coordinator, warranted at this time?</p> <p>f) Does the campus fleet use low-emission, alternative fuel and electric vehicles?</p> <p>g) Are electric equipment used in landscape maintenance?</p> <p>h) Are faculty and staff educated about air pollution problems and solutions?</p> <p>i) Are centralized utilities employed in place of individual utilities?</p> <p>j) If the University has developed 1,000,000 square feet of building space under the RBC LRDP, has the next building project that would add new stationary or area sources of emissions conducted a project-specific air quality impact assessment?</p> <p>k) Does the project implement measures to reduce emissions, such as solar or low-emission boilers, and low-emission cooling towers?</p>	<p>Lead: Dev Dir, With: EH&S, P&T</p>	<p>P, O</p>
<p><u>Stationary and Area Source Control Measures</u></p>			
<p>When the University has developed 1,000,000 square feet of building space on the RBC site, if and when a specific building project is proposed that would add new stationary or area sources of emissions to the RBC site, the University will conduct a project-specific air quality impact assessment. If significant impacts are identified, project-specific mitigation measures will be implemented, which would include, but not be limited to, the following:</p>			
<ul style="list-style-type: none"> • Select solar or low-emission boilers. • Select low-emission cooling towers. 			
<p>Other control measures determined appropriate for the specific project based on project-specific analysis.</p>			
<p>LRDP MM AIR-4a: Implement LRDP MM AIR-2 to minimize the operational emissions of PM_{2.5} from mobile and stationary sources and TAC emissions from on-site stationary sources.</p>	<p>a) Has LRDP MM Air-2 been implemented?</p>	<p>Lead: Dev Dir, With: EH&S, P&T</p>	<p>P, O</p>

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<p>LRDP MM AIR-4b: To reduce the effects from RBC laboratory emissions of formaldehyde and chloroform, the University shall implement one of the following measures in conjunction with every laboratory project that involves the use of these chemicals:</p> <ul style="list-style-type: none"> • Implement one or more emission control technologies on laboratory fume hoods or stacks. Controls will be limited to portions of the laboratory that involves the use of formaldehyde and chloroform. Controls will be selected specific to the chemical emissions to be controlled (formaldehyde or chloroform or both chemicals), and in the case of laboratory stacks, may include, as appropriate, activated carbon filters, scrubbers, biofilters, flares, catalytic converters, cryogenic condensers, vapor recovery systems, and thermal oxidizers. • Demonstrate that the project’s use of formaldehyde and chloroform will be at least 10 percent below that assumed for the LRDP human health risk assessment. <p>In the event that neither measure can be implemented, the laboratory project shall demonstrate by preparing a new human health risk assessment that the maximum acute hazard from project emissions, in conjunction with existing site emissions and future emissions under the 2014 LRDP, will not exceed a hazard index of 1.0.</p>	<p>a) Are emission control technologies implemented on fume hoods or stacks, where laboratories use formaldehyde and/or chloroform?</p> <p>b) Have controls been selected based upon chemical emissions to be controlled?</p> <p>c) Can the University demonstrate that use of formaldehyde and chloroform at the RBC will be at least 10 percent below that assumed for the LRDP health risk assessment?</p> <p>d) If none of the above can be met, has the project prepared a new health risk assessment demonstrating emissions below a hazard index of 1.0?</p>	<p>Lead: Dev Dir With: EH&S, CP</p>	<p>P,W,O</p>

BIOLOGICAL RESOURCES

LRDP MM BIO-2: Avoid construction, demolition, or renovation activities in areas adjacent or nearby to marshland nesting bird habitat during the nesting season (February 1 – August 31) and specify that construction schedules make efforts to further reduce noise and vibration during known nesting periods

If construction, demolition, or renovation were proposed to occur during the nesting season, a nesting bird survey shall be performed by a qualified biologist up to approximately 7 days prior to work commencing, up to 100 feet beyond the project boundary. If no birds or evidence of birds are found, no further action is required, provided work commences within approximately 1 week of the survey

a) Does the project make efforts to avoid noisy construction during nesting season (February 1 to August 31)?

b) Is project construction, demolition or renovation in an area adjacent or near to marshland? If so, is it scheduled to avoid nesting season (February 1 to August 31)?

d) Has a nesting bird survey been performed by a qualified biologist no more than 7 days prior to work

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<p>to prevent “take” of individual birds that may have begun nesting after the survey.</p> <p>If nesting birds with eggs or young are observed during the pre-construction surveys, construction, demolition, or renovation in the affected project area shall not commence within 100 feet of the occupied nest until after the young have fledged.</p> <p>Engage in ESA Section 7 or Section 10 consultation (formal or informal, as appropriate) with the USFWS for implementation level LRDP components (depending on whether those components constitute a federal or state action, e.g., approvals or funding) to address any potential impacts on California clapper rail. Develop appropriate measures with USFWS and implement them.</p> <p>Establish a 150-foot-wide temporary “no disturbance” buffer around the wetland/upland boundary of Western Stege Marsh/Meeker Slough when construction occurs during the breeding season (mid-March to July). This buffer would protect and buffer potential California clapper rail habitat and nesting areas during construction by prohibiting entry into this area.</p> <p>To prevent take of individuals, as required under the MBTA, ESA, CESA, and California Fish and Game Code, which includes harm and harassment under the ESA, a buffer zone of an appropriate size to prevent substantial adverse effects from construction would be established through consultation with the USFWS.</p> <p>Post interpretative California clapper rail signs in and near Western Stege Marsh/Meeker Slough. Signs should include seasonal use restrictions (e.g., stay on designated trails, pets on leash), to reduce disturbance potential during construction and operations.</p>	<p>commencement, up to 100 feet beyond project boundary?</p> <p>e) Has work commenced no more than one week since the survey was conducted?</p> <p>f) If nesting birds have been found, has the project been delayed until after young have fledged?</p> <p>g) For projects with potential to impact California clapper rail, have agency consultations occurred? Have agency recommendations been implemented?</p> <p>h) For projects adjacent or near marshland, has a 150 foot wide temporary “no disturbance” buffer been established around the wetland/upland boundary of Western Stege Marsh/Meeker Slough if construction occurs during breeding season (mid March to July)?</p> <p>i) Has a buffer zone of appropriate size been established through required consultation that prevents substantial adverse effects of construction upon the California clapper rail?</p> <p>j) Are there interpretive signs in and near Western Stege Marsh/Meeker Slough that include seasonal use restrictions?</p>	<p>Lead: Dev Dir</p> <p>With: CP, EH&S, SS</p>	<p>W, C, O</p>
<p>LRDP MM BIO-3: 2014 LRDP implementation projects shall avoid disturbance to special-status bats’ maternity roosts during the breeding season in accordance with the following procedures for Pre-Construction Special-Status Bat Surveys and Subsequent Actions. No more than 2 weeks prior to commencement of any concrete breaking or similarly noisy construction/demolition activity during the breeding season (March 1 through August 31), a qualified bat biologist shall conduct pre-demolition surveys of all potential special-status bat breeding habitat</p>	<p>a) Is concrete breaking, noisy construction/ demolition, or tree removal anticipated by the project?</p> <p>(If Yes, continue to b), if No, see next measure)</p> <p>b) Is concrete breaking, noisy construction/ demolition, or tree removal anticipated to occur</p>	<p>Lead: Dev Dir</p> <p>With: CP, EH&S, SS</p>	<p>W, C, O</p>

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<p>in the disturbance vicinity. Depending on the survey findings, the following actions shall be taken to avoid potential adverse effects on breeding special-status bats:</p>	<p>during bat breeding season (March 1 through August 31)?</p>		
<p>1. If active roosts are identified during pre-construction surveys, a no-disturbance buffer shall be created by the qualified bat biologist, in consultation with the CDFW, around active roosts during the breeding season. The size of the buffer shall take into account factors such as:</p>	<p>(If Yes, continue to c), if No, see next measure)</p>		
<p>a. Noise and human disturbance levels at the project site and the roost site at the time of the survey and the noise and disturbance expected during the construction,</p>	<p>c) Has a survey been completed by a bat biologist no more than two weeks prior to the commencement of noisy work?</p>		
<p>b. Distance and amount of vegetation or other screening between the project site and the roost, and</p>	<p>d) Were active roosts of special status bats found?</p>		
<p>c. Sensitivity of individual nesting species and the behaviors of the bats.</p>	<p>(If Yes, continue to e))</p>		
<p>2. If pre-construction surveys indicate that no roosts of special-status bats are present, or that roosts are inactive or potential habitat is unoccupied, no further mitigation is required.</p>	<p>e) Has a no-disturbance buffer been established by the bat biologist in consultation with CDFW, accounting for noise and human disturbance levels at the project site and the roost site at the time of the survey and the noise and disturbance expected during the construction; distance and amount of vegetation or other screening between the project site and the roost, and; sensitivity of individual nesting species and the behaviors of the bats?</p>		
<p>3. Pre-construction surveys are not required for demolition or construction scheduled to occur during the non-breeding season (September 1 through February 28).</p>	<p>f) Is destruction or overt interference of special-status bat roosts prohibited at the RBC?</p>		
<p>4. Noisy demolition or construction as described above (or activities producing similar substantial increases in noise and activity levels in the vicinity) commencing during the non-breeding season and continuing into the breeding season do not require surveys (as it is assumed that any bats taking up roosts would be acclimated to project-related activities already under way). However, if trees are to be removed during the breeding season, the trees shall be surveyed for roosts prior to their removal, according to the survey and protective action guidelines 1a through 1c, above.</p>	<p>g) Are noise control measures described in the EIR at section 4.10 implemented at the RBC?</p>		
<p>5. Bat roosts initiated during demolition or construction are presumed to be unaffected by the activity, and a buffer is not necessary.</p>			
<p>6. Destruction of roosts of special-status bats and overt interference with</p>			

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<p>roosting activities of special-status bats shall be prohibited.</p> <p>7. The noise control procedures for maximum noise, equipment, and operations identified in Section 4.10, Noise, shall be implemented.</p>			
<p>LRDP MM BIO-5: Mitigation for LRDP-related impacts on grasslands will expand as the campus grows.</p> <p>a) Once the RBC LRDP is approved for implementation, UC Berkeley shall commence initial phase implementation of a Coastal Terrace Prairie Grassland Management Plan that addresses exotics removal, tree and Baccharis (a genus in the Aster family) removal, weed management, programs for native plant stock preservation to aid in preservation and enhancement of the grassland portion of the Natural Open Space area, and the requirement to install monitoring wells in such a manner that causes the least amount of grassland disturbance. See Appendix G for the 2014 Richmond Bay Campus Coastal Terrace Prairie Management Plan.</p> <p>b) As initial projects under the LRDP are implemented, proactive (not passive) measures to improve the quality of the native grasslands in the Natural Open Space area shall be funded and undertaken. This may take the form of support for research and education into effective restoration. Possible fund sources include the UC Berkeley Capital Renewal Program, which assesses a four percent fee on all capital budgets (UC Berkeley 2013).</p> <p>c) Once a project is proposed that may alter high quality grassland within the Natural Open Space land use zone by constructing minor access roads, structures, or boardwalks, the University shall update its Coastal Terrace Prairie Grassland Management Plan to guide conservation and enhancement efforts, as well as the siting of boardwalks and minor access roads and structures in a resource-sensitive manner. The plan shall include weed management actions, annual monitoring and reporting, and adaptive management sufficient to maintain or improve the quality of the grasslands preserved in the designated Natural Open Space. The effectiveness of the plan shall be continually evaluated and the plan adjusted as needed.</p> <p>d) Prior to approving any action to develop the Northwest Meadow or to develop on other high, medium, or low quality grasslands outside of the Natural Open Space land use zone, the University shall conduct a site-</p>	<p>a) Has initial implementation of the CTP Management Plan commenced at the RBC?</p> <p>b) Are proactive measures to improve the grassland portion of the NOS proceeding apace with initial project implementation under the RBC LRDP?</p> <p>c) If a project to alter the grassland portion of the NOS is proceeding, is it guided by the CTP Management Plan? Is siting being undertaken in a resource-sensitive manner?</p> <p>d) If a project to alter the grassland portion of the NOS is proceeding, is siting being undertaken in a resource-sensitive manner?</p> <p>e) Is effectiveness of the CTP Management Plan being continually evaluated, and the plan adjusted as needed?</p> <p>f) Prior to approving any action to develop any grassland in the RES, has the University conducted a site-specific native plant survey?</p> <p>g) Have results of any site-specific native plant survey been posted to a public website?</p> <p>h) Is the native plant stock from any development site being used to enhance and restore the NOS grassland areas, or to develop or restore meadow acreage elsewhere?</p>	<p>Lead: Dev Dir With: CLA, PEP, EH&S, SS</p>	<p>P, O</p>

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<p>specific native plant survey. All survey results would be published to the University environmental website for the RBC. The University would apply the results of such surveys to implement a program that would use the native plant stock from such area to aid enhancement and restoration in Natural Open Space grassland areas, and to develop or restore meadow acreage elsewhere. Possible locations include formal landscaped open areas of the RBC, rooftops of buildings at the RBC, demonstration meadows at UC Berkeley or in the city of Richmond that help explain the former extent of regional coastal terrace prairie grasslands.</p>			
<p>LRDP MM BIO-6:</p>			
<p>BIO-6a: 2014 LRDP development projects shall avoid, to the extent feasible, the filling of or discharging to potentially jurisdictional waters. Therefore, during the design phase of any future development project that may affect potentially jurisdictional waters, a preliminary evaluation of the project site shall be made by a qualified biologist to determine if the site is proximate to potentially jurisdictional waters and, if deemed necessary by the biologist, a wetlands delineation shall be prepared and submitted to the USACE for verification.</p>	<p>a) Has the project site been evaluated by a qualified biologist to determine potential for jurisdictional waters in or near the footprint?</p> <p>b) If the biologist determines potential for jurisdictional waters at or near the site, has a wetlands delineation been prepared and submitted to USACE for verification?</p> <p>c) Does the project avoid filling or discharge to jurisdictional waters?</p> <p>d) If filling or discharge is unavoidable, does the project have a wetland mitigation plan, developed in consultation with USACE, CDFW, SF Bay RWQCB?</p> <p>e) If filling or discharge is unavoidable, does the project have required permits?</p> <p>f) If project has potential to effect jurisdictional drainages or wetlands, is construction scheduled for dry-weather months?</p>	<p>Lead: Dev Dir With: CP, EH&S</p>	<p>C,W,O</p>
<p>Because the USACE’s preferred mitigation for impacts to jurisdictional waters is avoidance, to the extent practicable, 2014 LRDP development shall be located to avoid the filling of or discharging to jurisdictional waters.</p>			
<p>BIO-6b: Any unavoidable loss of jurisdictional waters shall be compensated for through the development and implementation of a project-specific wetland mitigation plan.</p>			
<p>If a 2014 LRDP development project were to potentially impact jurisdictional waters, impact compensation would be based on the USACE-verified wetlands delineation identified in Mitigation Measure BIO-6a. During the permit application process for specific development projects that would impact jurisdictional waters, the University would consult with the USACE, CDFW, and San Francisco Bay RWQCB. The consultation would be to identify the most appropriate assessment and mitigation methods to adequately address losses to wetland function that could occur from the development projects. A project-specific wetland mitigation plan would be developed prior to project</p>			

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<p>implementation and submitted to permitting agencies for their approval. The plan may include on-site or off-site restoration or creation or purchasing of credits from a wetland mitigation bank.</p> <p>All mitigation work proposed in existing wetlands on- or off-site shall be authorized by applicable permits.</p> <p>BIO-6c: To the extent feasible, construction projects that might affect jurisdictional drainages or wetlands shall be scheduled for dry-weather months. Avoiding ground-disturbing activities during the rainy season would further decrease the potential risk of construction-related discharges to jurisdictional waters.</p>			
<p>LRDP ENVIRONMENTAL PROTECTION PRACTICE BIO-4: The University could develop and implement a successional tree planting plan that would maintain the availability of monarch butterfly wintering habitat at the RBC site.</p>	<p>Has the University developed and implemented a successional tree planting plan to maintain the availability of monarch butterfly wintering habitat at the RBC?</p>	<p>Lead: Dev Dir With: PEP, CLA, SS</p>	<p>P, O</p>
<p>LRDP ENVIRONMENTAL PROTECTION PRACTICE BIO-5: Currently, and continuing if the LRDP is adopted, the University would mow open space areas consistent with the 2008 report, Richmond Field Station Remediation and Restoration Project Habitat Restoration Progress Report 2003 – 2007, Appendix 2 “Guidelines for Mowing Harding Grass Within and Adjacent to Coastal Terrace Prairie Habitat at the University of California, Richmond Field Station.”</p>	<p>Are NOS grassland areas mowed consistent with Appendix 2 of the 2008 RFS Remediation and Restoration Project Habitat Restoration Progress Report 2003-2007?</p>	<p>Lead: Dev Dir With: SS</p>	<p>O</p>
CULTURAL RESOURCES			
<p>LRDP MM CR-1: Prior to any project-related excavation or construction, the University shall adequately survey all relevant disturbance areas for archaeological resources and assess the potential for buried resources based on past land use, site records, and proximity to known resources and landforms. Depending on the resulting level of suspected archaeological sensitivity, archaeological testing shall be done and/or qualified archaeological monitors will be present during ground disturbing activities.</p> <p>Prior to any ground disturbing activities that could disturb potentially existing</p>	<p>a) Has the University surveyed a proposed excavation or construction site for archaeological resources?</p> <p>b) Depending upon resulting archaeological sensitivity, has archaeological testing been done, or will archaeological monitors be present during ground disturbing activities?</p> <p>c) Has the University prepared a Construction</p>	<p>Lead: Dev Dir With: CP, SS</p>	<p>W, C, O</p>

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<p>archaeological resources, the University would prepare a Construction Monitoring and Unanticipated Cultural Resources Discovery Plan to be implemented if an unanticipated discovery is made. At a minimum, the plan would detail the following elements:</p>	<p>Monitoring and Unanticipated Cultural Resources Discovery Plan, discussing at minimum:</p>		
<ul style="list-style-type: none"> • Worker and supervisor training in the identification of cultural remains that could be found in the proposed project area • Worker and supervisor response procedures to be followed if there is an unanticipated discovery, including appropriate points of contact for professionals qualified to make decisions about the potential significance of any find • Identities of persons authorized to stop or redirect work that could affect the discovery, and their on-call contact information • Procedures for monitoring construction activities in archaeologically sensitive areas • A minimum radius (typically a minimum of 50 feet) around any discovery in which work would be halted until the significance of the resource has been evaluated and mitigation implemented as appropriate • Procedures for identifying and evaluating the historical significance of a discovery • Procedures for consulting Native Americans when identifying and evaluating the significance of discoveries involving Native American cultural materials • Procedures to be followed for treatment of discovered human remains per current state law, including appropriate notification and consultation with Native American groups or individuals 	<ul style="list-style-type: none"> • Worker and supervisor training in the identification of cultural remains that could be found in the proposed project area • Worker and supervisor response procedures to be followed if there is an unanticipated discovery, including appropriate points of contact for professionals qualified to make decisions about the potential significance of any find • Identities of persons authorized to stop or redirect work that could affect the discovery, and their on-call contact information • Procedures for monitoring construction activities in archaeologically sensitive areas • A minimum radius (typically a minimum of 50 feet) around any discovery in which work would be halted until the significance of the resource has been evaluated and mitigation implemented as appropriate • Procedures for identifying and evaluating the historical significance of a discovery • Procedures for consulting Native Americans when identifying and evaluating the significance of discoveries involving Native American cultural materials • Procedures to be followed for treatment of discovered human remains per current state law, including appropriate notification and consultation with Native American groups or 		
<p>If any suspected human bone is found during construction, all work should stop and the Contra Costa County coroner should be notified immediately per State law and the Discovery Plan. If the remains are determined to be Native American, the Native American Heritage Commission shall be notified for determination of the most likely descendent and tribal affiliation for disposition.</p>			

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Mitigation Measure or Environmental Protection Practice	Question(s) for Checklist	Responsible for Implementation	When Implemented
No additional work shall take place near the find until the identified actions have been implemented.	individuals? d) If suspected human bone is found, has the coroner been notified per State law and the Discovery Plan? e) If suspected human bone is determined to be Native American, has the Native American Heritage Commission been notified? f) Has work near the find stopped while identification actions are implemented?		
LRDP MM CR-2: Because demolition of Buildings 150 and 175 cannot be avoided, historic documentation would be completed by professionals meeting the Secretary of the Interior’s Professional Qualification Standards for architectural history. Recording each structure to the standard established for the National Park Service’s Historic American Building Survey or Historic American Engineering Record would include high resolution digital photographs taken of historic buildings in their current condition. Up to 20 archival black and white prints would be prepared as part of the recordation package. Construction or as-built drawings (if available) would be reproduced on archival paper.	a) Prior to demolition of Buildings 150 and 175, is recordation in accordance with NPS standards complete, including preparation of up to 20 archival black and white prints and reproduction of construction or as-built drawings (if available) on archival paper?	Lead: Dev Dir With: PEP, SS	P
LRDP MM CR-3: CR-3a: Prior to any project construction or demolition activities, the University shall ensure that all buildings and structures in the construction footprint have been adequately inventoried. If any of the inventoried structures are found to be historically significant and are to be retained, the University shall develop reuse or maintenance plans to identify the historic features of the building and prepare design guidelines based on the Secretary of Interior’s Standards and Guidelines for the Treatment of Historic Properties and to ensure that the buildings retain their historic, character-defining features. CR-3b: If avoidance of direct or indirect impacts on (as yet unidentified) historic buildings is not possible, the University shall determine site specific mitigation measures. Historic documentation would be completed by professionals meeting the Secretary of the Interior’s Professional Qualification	a) Have buildings or structures to be demolished in a project footprint been inventoried? b) For buildings or structures found to be historic, have historic features been identified, and design guidelines prepared in accordance with the SOI standards to ensure historic features are maintained? c) If buildings or structures found to be historic cannot be maintained, are site-specific mitigation measures proposed? d) If buildings or structures found to be historic cannot be maintained, is documentation in accordance with NPS standards complete?	Lead: Dev Dir With: PEP, DRC, SS	P

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Mitigation Measure or Environmental Protection Practice	Question(s) for Checklist	Responsible for Implementation	When Implemented
Standards for architectural history. Structures would be recorded to the standard established for the National Park Service’s Historic American Building Survey or Historic American Engineering Record. This would include high resolution digital photography of historic buildings in their current condition. Up to 20 archival black and white prints would be prepared as part of the recordation package. Construction or as-built drawings (if available) would be reproduced on archival paper.			
GEOLOGY AND SOILS			
LRDP MM GEO-2:			
GEO-2a: A site-specific, design-level geotechnical investigation shall be completed during the design phase of each new building project and prior to construction approval on the RBC site. This investigation shall be conducted by a licensed geotechnical engineer and shall include an evaluation of potential soils hazards and appropriate measures to minimize these hazards. Geotechnical recommendations shall subsequently be incorporated into building design.	a) Has a site-specific design-level geotechnical investigation been completed during the design phase for the project?	Lead: Dev Dir	P, W, C
	b) Have geotechnical recommendations of the report been incorporated into building design?	With: CP	
	c) Does construction comply with the ABAG Manual of Standards for Erosion and Sediment Control?		
	d) Does project construction include revegetation of disturbed areas, including slope stabilization projects, using native shrubs, trees or grasses?		
GEO-2b: Construction under the LRDP shall comply with the Association of Bay Area Government’s Manual of Standards for Erosion and Sediment Control Measures, and the California Stormwater Quality Association’s Stormwater Best Management Practice Handbook for Construction (CASQA 2003) (or subsequent editions thereof). Construction under the LRDP shall use construction BMPs and standards to control and reduce erosion. These measures could include, but are not limited to, restricting grading to the dry season, protecting all finished graded slopes from erosion using such techniques as erosion control matting and hydroseeding, or other suitable measures.			
GEO-2c: All LRDP construction projects shall include, as appropriate, revegetation of disturbed areas (including slope stabilization projects) using native shrubs, trees, or grasses.			

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Mitigation Measure or Environmental Protection Practice	Question(s) for Checklist	Responsible for Implementation	When Implemented
GREENHOUSE GAS EMISSIONS			
<p>LRDP MM GHG-1: The University will develop a climate action plan for the RBC site within three years of adoption of the 2014 LRDP or before construction on the first project under the 2014 LRDP commences, whichever comes first. The climate action plan will include campus-wide greenhouse gas reduction measures as well as a suite of project-level greenhouse gas reduction measures that will be incorporated into each building project, as appropriate, during the planning, design and construction of the project.</p>	<p>a) Within three years of adoption of the 2014 LRDP, or before construction on a first LRDP project, has the University developed a climate action plan for the RBC?</p> <p>b) Does the climate action plan for the RBC include campus-wide greenhouse gas reduction measures, project-level greenhouse gas reduction measures, and target emissions rates per person consistent with AB 32 and EO S-3-05 emission targets?</p> <p>c) Does the project implement specific control measures and programs under the climate action plan, at minimum addressing: energy efficiency, renewable energy generation, vehicle trip minimization, renewable fuel vehicles, and waste reduction?</p>	<p>Lead: Dev Dir With: SUST, PEP, CP</p>	<p>P, W</p>
<p>The climate action plan will include target emission rates per service person that are consistent with AB 32 and Executive Order S-3-05 emissions targets. The climate action plan will also implement specific control measures and programs to achieve these targets. These control measures and programs will be developed specifically for each project based on its siting and design needs, but they will at minimum address these general topics:</p>			
<ul style="list-style-type: none"> • Energy Efficiency: minimize energy consumption to the extent possible through measures such as design guidelines for new buildings that require specific levels of energy efficiency, incentive programs for employees or departments to reduce energy use, programs to track energy use and discover opportunities to reduce waste, and landscaping or other features that provide shade or otherwise help reduce energy use. • Renewable Energy Generation: investigate and develop opportunities for renewable energy generation on campus, whether solar, wind, or other sources. • Vehicle Trip Minimization: encourage the use of carpools, shuttles, bicycles, or public transportation that provide resources for employees to access and use alternative transportation, and provide infrastructure that allows employees to interact or conduct meetings and business without traveling. • Renewable Fuel Vehicles: encourage or require the use of renewable fuel vehicles such as by providing electric vehicle charging and compressed natural gas fueling stations, purchasing renewable fuel vehicles for the 			

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Mitigation Measure or Environmental Protection Practice	Question(s) for Checklist	Responsible for Implementation	When Implemented
<p>campus fleet, and providing preferential parking or other incentives for drivers using renewable fuel or hybrid vehicles.</p> <ul style="list-style-type: none"> Waste Reduction: implement waste reduction, aggressive recycling goals with incentives, composting systems for general buildings and dining areas, guidelines for low waste construction and purchasing, and educational programs. 			

HAZARDS AND HAZARDOUS MATERIALS

<p>LRDP ENVIRONMENTAL PROTECTION PRACTICE HAZ-1: In implementing the 2014 LRDP, UC Berkeley and LBNL shall continue the same (or equivalent) health and safety plans, programs, practices and procedures related to the use, storage, disposal, and transportation of hazardous materials and wastes (including chemical, radioactive and bio-hazardous materials and waste) as are currently practiced at the UC Berkeley main campus and at the LBNL hill site. These include, but are not limited to, UC Berkeley and LBNL requirements for safe transportation of hazardous materials; EH&S training programs; the requirement that laboratories have chemical hygiene plans; a chemical inventory; a toxic use reduction program; a spill prevention, control, and countermeasure plan; monitoring of underground storage tanks; a waste minimization program; a biosafety program; a waste management program (including medical and biohazardous waste); a radiation safety and/or protection program; compliance with radioactive air emission regulations (40 CFR 61) and compliance with DOE Orders for LBNL activities; compliance with the National Institutes of Health Guidelines for Research Involving Recombinant DNA Molecules; and compliance with US Department of Agriculture requirements for open-field-based research involving transgenic plants.</p>	<p>Are RBC health and safety plans, programs, practices and procedures addressing use, storage, disposal and transportation of hazardous materials and waste the same or equivalent to such programs at UC Berkeley and LBNL?</p>	<p>Lead: Dev Dir With: EH&S, SS</p>	<p>O</p>
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HYDROLOGY AND WATER QUALITY

N/A

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Mitigation Measure or Environmental Protection Practice	Question(s) for Checklist	Responsible for Implementation	When Implemented
LAND USE AND PLANNING			
N/A			
NOISE			
<p>LRDP MM NOISE-1:</p> <p>NOISE-1a: Where technically and economically feasible, construction activities shall be conducted in such a manner that the maximum sound levels at the surrounding properties shall not exceed the dBA levels set forth in the Richmond Municipal Code Section 9.52.110.</p> <p>NOISE-1b: The following measures shall be implemented for all construction equipment in accordance with Richmond Municipal Code Section 9.52.060. Quiet construction equipment, particularly air compressors, shall be used whenever possible. Construction equipment powered by internal combustion engines shall be properly muffled and maintained. Stationery noise-generating construction equipment such as tree grinders and air compressors are to be as far as is practical from existing residences. Unnecessary idling of internal combustion engines shall be prohibited. Sources of impulsive sound and jack hammers shall not be used on Sundays and holidays, except for emergencies.</p> <p>NOISE-1c: If after implementing NOISE-1a and -1b, construction noise creates a disturbance or results in noise complaints from adjacent property, additional noise reduction strategies shall be evaluated and the necessary practicable technically and economically feasible noise mitigating measures would be implemented, sufficiently to ensure meeting City Noise Ordinance requirements.</p>	<p>a) Are construction activity sound levels below dBA levels set in Richmond Municipal Code Section 9.52.110 where feasible?</p> <p>b) Are quiet construction equipment, combustion engine mufflers, in use where possible?</p> <p>c) Is noise-generating stationery construction equipment sited as far from residences as practical?</p> <p>d) Is unnecessary idling of engines prohibited?</p> <p>e) On Sundays and holidays, are sources of impulsive sound and jackhammers prohibited in construction (except emergencies)?</p> <p>f) If noise complaints or disturbance persists, have additional noise reduction strategies been evaluated and implemented as practical to meet City Noise Ordinance requirements?</p>	<p>Lead: Dev Dir</p> <p>With: CP, SS</p>	C
POPULATION AND HOUSING			
N/A			

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Mitigation Measure or Environmental Protection Practice	Question(s) for Checklist	Responsible for Implementation	When Implemented
PUBLIC SERVICES AND RECREATION			
N/A			
TRANSPORTATION AND TRAFFIC			
<p>LRDP MM TRA-1:</p> <p>The University shall develop and implement a campus traffic mitigation program, a multi-component program to monitor trip generation, reduce peak-hour trips to the extent feasible, or participate in intersection improvements to mitigate off-site impacts at the intersections affected by the proposed project. Each component of this program is described below.</p> <p>Transportation Demand Management (TDM). To reduce on- and off-campus vehicle trips and resulting impacts, the University shall develop and implement a TDM program in consultation with the City of Richmond. The program will be adopted by the University following The Regents’ approval of the RBC LRDP. The TDM program will include measures to increase transit and shuttle use, encourage alternative transportation modes including bicycle transportation, implement parking policies that reduce demand, and other mechanisms that reduce vehicle trips to and from the campus. The University shall monitor the performance of RBC TDM strategies through annual surveys. The University shall report on implementation of adopted TDM strategies, whether defined in the LRDP or in a stand-alone TDM program, annually following completion of an initial traffic-inducing project under the RBC LRDP.</p> <p>Transit Enhancement. To enhance transit systems serving the campus, the University shall work cooperatively with AC Transit and other local agencies to coordinate service routes with existing and proposed shuttle and transit programs.</p> <p>Sustainability and Monitoring. The University shall review individual projects proposed under the 2014 LRDP for consistency with UC sustainable transportation policy and the RBC TDM program to ensure that bicycle and pedestrian improvements, alternative fuel infrastructure, transit stops, and other project features that promote alternative transportation are incorporated into each</p>	<p>a) Has the University developed a TDM program in consultation with the City of Richmond?</p> <p>b) Does the TDM program include measures to increase transit and shuttle use, encourage alternative transportation modes including bicycle transportation, implement parking policies that reduce demand, and other mechanisms that reduce vehicle trips to and from the campus?</p> <p>c) Is performance under the TDM program monitored through annual surveys and reported?</p> <p>d) Does the University work cooperatively with AC Transit and other local agencies to coordinate transit routes?</p> <p>e) Are individual projects under the LRDP reviewed for consistency with the UC sustainable transportation policy and the RBC TDM program re: bicycle, pedestrian, alternative fuel infrastructure, transit stops, and other project features to promote alternative transportation?</p> <p>f) Is the University conducting traffic counts at key RBC gateway locations not less than every 5 years to determine campus generated traffic?</p> <p>g) Is the University contributing fair-share funding for design and construction of improvements including, but are not limited to, new traffic signals,</p>	<p>Lead: Dev Dir With: P&T, SS</p>	<p>P, O</p>

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Mitigation Measure or Environmental Protection Practice	Question(s) for Checklist	Responsible for Implementation	When Implemented
<p>project to the extent feasible.</p> <p>Campus Traffic Impact Monitoring. The University shall conduct traffic counts at key RBC gateway locations no less frequently than every 5 years to determine campus-generated traffic. The University may undertake such traffic counts in connection with specific development projects at the RBC in order to inform signal warrant analyses and to help guide the selection of improvements that would mitigate significant traffic impacts.</p> <p>Mitigation Payments. The University shall contribute funding on a fair-share basis (to be determined in consultation with the City of Richmond and Caltrans) for improvements to signalized and unsignalized intersections, roadway segments, and in connection with railroad crossings that are necessary to mitigate the RBC’s significant traffic impacts. Those improvements may include, but are not limited to, new traffic signals, conversion of intersection approaches, conversion or optimization of traffic signal operations, and advance queue warning signs. The University’s contribution, which shall be proportional to the University’s responsibility for any traffic increases that necessitate mitigation, shall include funds for the design and construction of required improvements. When determining the University’s contribution, the University’s proportional responsibility for traffic impacts shall be measured through comparison to the traffic conditions that prevailed at the time of the LRDP’s approval, as described and analyzed in the LRDP EIR’s discussion of existing traffic conditions.</p> <p>With respect to unsignalized intersections specifically, the University shall contribute funding on a fair-share basis—following University approval of traffic-inducing development at the Richmond Bay Campus—for signal warrant analyses at unsignalized intersections significantly impacted by traffic resulting from the approved development. Data from the University’s campus traffic impact monitoring counts, described above, may inform the signal warrant analyses. Those analyses would be used by the City to determine when a signal is needed.</p> <p>When signal warrant analyses show that a signal is warranted and the City determines that the required intersection improvements are needed, the University shall reimburse the City on a fair-share basis for the required mitigation, including new traffic signals and related improvements at the</p>	<p>conversion of intersection approaches, conversion or optimization of traffic signal operations, and advance queue warning signs, necessary to mitigate significant traffic impacts of the RBC?</p> <p>h) When determining the University’s contribution to improvements outlined in g) above, is the University’s proportional responsibility measured through comparison to the traffic conditions that prevailed at the time of the LRDP’s approval, as described and analyzed in the LRDP EIR’s discussion of existing traffic condition?</p> <p>i) Is the University contributing fair-share funding for signal warrant testing at unsignalized intersections significantly impacted by traffic resulting from the approved development?</p> <p>j) When signal warrant analyses show that improvements are needed, is the University reimbursing the City for its portion of required mitigation?</p>		

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Mitigation Measure or Environmental Protection Practice	Question(s) for Checklist	Responsible for Implementation	When Implemented
<p>intersection impacted by the project. Should the City determine that alternative mitigation strategies may reduce or avoid the significant impact, the University shall work with the City and Caltrans to identify and implement such alternative feasible measures on a fair-share basis.</p>			
LRDP MM TRA-3: Implement LRDP MM TRA-1.	(see above)	(see above)	(see above)
<p>LRDP MM TRA-7: Prepare a construction traffic management plan for each RBC construction project to reduce construction impacts on traffic and parking. The University shall work with City of Richmond in preparing the plan, which will address:</p> <ul style="list-style-type: none"> • Proposed truck routes • Hours of construction and limits on number of truck trips during peak commute periods (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.) if traffic conditions demonstrate the need to reduce construction traffic so as to avoid causing significant delays. • Parking management plan for construction workers; • Tools to provide safe access for pedestrians, bicyclists, automobiles, and emergency access vehicles. • Identification of alternative routes for temporary closure of streets or paths during construction. 	<p>a) Has a construction traffic management plan been created for each RBC construction project, in consultation with the City of Richmond, addressing:</p> <ul style="list-style-type: none"> • Proposed truck routes • Hours of construction and limits on number of truck trips during peak commute periods (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.) if traffic conditions demonstrate the need to reduce construction traffic so as to avoid causing significant delays. • Parking management plan for construction workers; • Tools to provide safe access for pedestrians, bicyclists, automobiles, and emergency access vehicles. • Identification of alternative routes for temporary closure of streets or paths during construction. 	<p>Lead: Dev Dir With: CP, SS</p>	W, C

UTILITIES, SERVICE SYSTEMS, AND ENERGY

<p>LRDP MM UTL-4: When a project under the 2014 LRDP is proposed that would increase wastewater flows discharged from the RBC site, the University shall work with the City of Richmond to evaluate the impact of the specific project on both the sewer mains and at the Richmond Municipal Sewer District wastewater treatment plant, and if necessary based on the results of the</p>	<p>a) Has the University worked with the City of Richmond to evaluate project impacts on sewer mains and the Richmond Municipal Sewer District wastewater treatment plant?</p>	<p>Lead: Dev Dir With: CP, SS</p>	P, W
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Mitigation Measure or Environmental Protection Practice	Question(s) for Checklist	Responsible for Implementation	When Implemented
evaluation, the University will compensate the City for the cost of implementing improvements such as slip-lining sewer pipelines downstream of the project site to reduce infiltration and inflow volumes equivalent to or greater than the incremental volume of wastewater generated by the project, or if necessary would construct underground vaults on the RBC site to detain wastewater to reduce peak flows to sewer mains during wet weather.	b) Has the University compensated the City for costs of implementing improvements to reduce infiltration and inflow volumes to address the incremental volume of wastewater generated by the project, or constructed underground vaults on the RBC to detain wastewater to reduce peak period flows during wet weather?		
LRDP ENVIRONMENTAL PROTECTION PRACTICE UTL-7: LBNL and UC Berkeley shall develop and implement a plan to maximize diversion of construction and demolition materials from landfill disposal. The plan would set a goal of a minimum of 75 percent diversion, consistent with the UC Sustainable Practices Policy.	Has the University developed a plan to maximize diversion of construction and demolition materials from landfill disposal, with a goal of a minimum 75 percent diversion rate?	Lead: Dev Dir With: CP	C

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