

ATTACHMENT 4

MITIGATION MONITORING & REPORTING PROGRAM JULY 2015

This Draft Mitigation Monitoring and Reporting Program (MMRP) was formulated based upon the findings of the Environmental Impact Report (EIR) and Infill Initial Study Checklist prepared for the 2211 Harold Way Mixed-Use Project. The MMRP, which is provided in Tables 1 and 2 of this section, lists mitigation measures recommended in the EIR and the Infill Checklist for the proposed Project and identifies mitigation monitoring requirements. The Final MMRP must be adopted when the City makes a final decision on the project.

This MMRP has been prepared to comply with the requirements of State law (Public Resources Code Section 21081.6). State law requires the adoption of an MMRP when mitigation measures are required to avoid significant impacts. The MMRP is intended to ensure compliance during implementation of the project.

The MMRP is organized in a matrix format. The first column identifies the impact and the second column identifies the mitigation measure that will be implemented for each project impact. The third column, entitled "Monitoring Responsibility," refers to the agency responsible for oversight or ensuring that the mitigation measure is implemented. The fourth column, entitled "Monitoring Timing," refers to when the monitoring will occur to ensure that the mitigation action is completed. The lead agency will provide verification that the measures have been implemented. These mitigation measures include any minor revisions made as a result of the Response to Comments Document.

Table 1: 2211 Harold Way Mixed-Use Project EIR Mitigation Monitoring and Reporting Program

Impact Statement	Mitigation Measures	Monitoring Responsibility	Monitoring Timing	Verification (Date and Initials)
I. CULTURAL RESOURCES				
<p>CR-1 The proposed project would involve demolition of the 1926 addition to the Hotel. Both of these additions contribute to the hotel's historical significance and are included in the property's local landmark designation.</p>	<p>CR-1(a) Documentation. In consultation with the City of Berkeley Planning and Development, the project applicant shall complete Historic American Building Survey (HABS) Level II documentation of the Shattuck Hotel and its setting. This documentation shall include drawings, photographs, and a historical narrative.</p> <ul style="list-style-type: none"> • Drawings: Existing historic drawings of the Shattuck Hotel (including the original 1910 building and the 1912, 1913, and 1926 additions), if available, shall be photographed with large-format negatives or photographically reproduce on Mylar. In the absence of existing drawings, full-measured drawings of the complex's plan, exterior elevations, and courtyard elevations should be prepared. • Photographs: Photo-documentation of the Shattuck Hotel (including the original 1910 building and the 1912, 1913 and 1926 additions) shall be prepared to HABS standards for archival photography. HABS standards require large-format black-and-white photography, with the original negatives having a minimum size of 4 x 5 inches. Digital photography, roll film, film packs, and electronic manipulation of images are not acceptable. All film prints, a minimum of 4 x 5 inches, must be hand-processed according to the manufacturer's specifications and printed on fiber base single weight paper and dried to a full gloss finish. A minimum of 12 photographs must be taken, detailing the site, 	<p>City of Berkeley Planning Department, Land Use Division</p>	<p>Prior to the issuance of a demolition permit</p>	

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	<p>building exteriors, and building interiors. Photographs must be identified and labeled using HABS standards. Color 35mm non-archival photographs of the historical building and grounds shall be taken to supplement the limited number of archival photographs required under the HABS standards described above. Photographs should include overall views of the site; individual views of important building features; exterior elevations of each façade of the complex; views of interior courtyard spaces; and detail views of specific materials or elements.</p> <ul style="list-style-type: none"> • Historical Overview: In consultation with the City of Berkeley Planning and Development Department, a qualified historian or architectural historian shall assemble historical background information relevant to the Shattuck Hotel and its setting. Much of this information may be drawn from the Historic Context Report that architecture + history LLC has prepared for the property. The project applicant shall submit three hard copies and six electronic copies of the drawings and historical overview, along with two sets of photographic negatives, to the City of Berkeley. To ensure its public accessibility, the City of Berkeley will distribute the documentation to the Berkeley Public Library, UC Berkeley’s Environmental Design Archives, Berkeley Architectural Heritage Association, the Berkeley Historical Society, and the Northwest Information Center of the California Historical Resources Information System (CHRIS). 			

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	<p>CR-1(b) Salvage. The project applicant shall salvage materials from the 1913 and 1926 additions to the Shattuck Hotel for reuse on-site if feasible , as determined by the Zoning Officer, and given local historical societies the opportunity to salvage remaining materials for public information or reuse in other locations. This effort is expected to focus on the additions' multi-pane, metal-sash windows (currently painted over) as well as the ceiling plasterwork in the entry arcade. All salvaged materials shall be stripped of lead-based paint using safe handling methods. If, after 30 days, none of the societies is able and willing to salvage the materials, the materials shall be offered to local architectural salvage companies by placing an advertisement in a website and newspaper of general circulation for at least 30 days. Demolition may proceed only after any significant historic features or materials have been identified (at the applicant's cost) and their removal completed, unless none of the above organizations are interested in salvaging the materials.</p>	<p>City of Berkeley Planning Department, Land Use Division</p>	<p>Prior to the issuance of a demolition permit</p>	
	<p>CR-1(c) Onsite Interpretation. The project applicant shall incorporate a wall display featuring historic photos of the Shattuck Hotel property and a description of its historical significance into the publicly accessible portion of any subsequent development on the site. This display shall be developed by professionals meeting the Secretary of the Interior's Professional Qualifications (as verified by City of Berkeley planning staff) and experienced in creating such historical exhibits, with the assistance of City of Berkeley planning staff.</p>	<p>City of Berkeley Planning Department, Land Use Division</p>	<p>Plans for the exhibit shall be approved by the LPC prior to the issuance of a building permit.</p>	
	<p>CR-1(d) Contribution to the Historic Preservation Fund. The project applicant shall contribute funds to the City to be applied to future historic preservation activities within Downtown Berkeley, including survey</p>	<p>City of Berkeley Planning Department, Land Use</p>	<p>Prior to the issuance of a building permit.</p>	

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	work; property research; and evaluation in accordance with the Secretary of the Interior’s Standards.	Division		
<p>CR-2 The proposed project would alter the setting of historic landmarks adjacent to and facing the project, including the Shattuck Hotel, the Public Library, and the former Elks Lodge and Armstrong College buildings because the project’s design elements would be partially inconsistent with the Secretary of the Interior’s Standards and the Downtown Berkeley Design Guidelines.</p>	<p>CR-2(a) Allston Way Elevation. New construction on the Allston Way elevation shall incorporate horizontal façade elements that reference the roofline of the adjacent 1912 restaurant addition to the Shattuck Hotel. Specifically, new construction shall incorporate a horizontal belt course along its Allston Way façade that corresponds to the cornice and parapet of the 1912 addition. This belt course shall include a cornice element or other horizontal embellishment that projects from the face of the building. (This element could consist of a simple projecting molding, for example, that is stylistically in keeping with the contemporary design of the proposed project.) By incorporating this belt course, the proposed project, despite being considerably taller than the Shattuck Hotel, would better maintain the scale and feel of the historic building frontage along Allston Way.</p>	<p>City of Berkeley Planning Department, Land Use Division</p>	<p>Plans and designs for the Allston Way elevation shall be approved by LPC in Final Design Review (FDR) prior to the issuance of a building permit.</p>	
	<p>CR-2(b) Kittredge Street Elevation. At the Kittredge Street elevation, the proposed project includes a two-story “hyphen” that separates the Shattuck Hotel from the 12- and 18-story portions of the project to the west. Project drawings show the Kittredge Street façade of this portion of the project as a blank wall, potentially covered in vegetation. Such wall treatment is incompatible with the historic setting. Perforations (such as a door or windows) or other architectural elements shall be incorporated into the design of this wall so as to maintain an active street frontage that is more in keeping with the ground floors of the nearby historical resources and the larger Shattuck Avenue Commercial Corridor.</p>	<p>Final Design Review City of Berkeley Planning Department, Land Use Division</p>	<p>Plans and designs for the Kittredge Street elevation with architectural elements to maintain an active street frontage shall be approved by LPC in FDR prior to the issuance of a building permit.</p>	
	<p>CR-2(c) Glazed Aluminum Window Wall Systems. While the glazed aluminum window wall systems</p>	<p>City of Berkeley Planning</p>	<p>Plans and designs for the</p>	

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	<p>proposed for much of the project would clearly differentiate the proposed project from nearby historical resources, the design of these wall systems needs to be modified to make them more compatible with those resources. The proportion and pattern of void to wall in the wall treatments of the proposed project shall be modified to more closely match Library, the former Elks Lodge and the former Armstrong College building. Potential ways to achieve this include replacing the window wall systems with punched curtain wall systems similar to those used elsewhere in the project, or breaking up the window wall systems with windowless bays.</p>	<p>Department, Land Use Division</p>	<p>glazed aluminum window wall systems with translucent panels shall be approved by LPC in FDR prior to the issuance of a building permit.</p>	
<p>CR-4 Construction activities associated with demolition of the 1959 Hink’s building and the 1926 addition to the Shattuck Hotel, and partial removal of the 1913 addition to the Shattuck Hotel, could produce ground vibration or soil movement under the existing foundation of nearby historic resources, compromising the historic building’s structural stability.</p>	<p>CR-4(a) Foundations Investigation. A registered structural engineer with a minimum of 5 years of experience in the rehabilitation and restoration of historic buildings, meeting the Secretary of the Interior’s Professional Qualifications, shall investigate the existing relationship of the foundations of the various portions of the Shattuck Hotel property. Any required test excavations shall be performed only in the presence of the structural engineer. The structural engineer shall prepare a report of findings that specifies modifications to the project design and/or associated construction activities that are necessary to retain the structural integrity of the Shattuck Hotel (including the original 1910 building, the 1912 addition, and the portion of the 1913 addition proposed for retention).</p> <p>In consultation with a historic preservation architect meeting the Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation, Professional Qualifications Standards, the structural engineer (with geotechnical consultation as necessary) shall determine whether, due to the nature of the</p>	<p>Applicant’s historical architecture and structural engineering consultants</p> <p>City of Berkeley Planning Department, Land Use Division</p>	<p>Prior to the issuance of a demolition permit</p>	

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	<p>excavations, soils, method of soil removal and the existing foundations of the Shattuck Hotel, the potential for settlement would require underpinning and/or shoring. If underpinning and/or shoring is determined to be necessary, appropriate designs shall be prepared and submitted for review and approval.</p> <p>Foundation and shoring shall not use driven or vibration piles. Only cast-in-place or auger piles or micropiles shall be used for shoring, underpinning, and/or new foundations. The existing structure shall be shored at each side of the location where the western portion of the hotel is to be demolished. After the existing structure is shored, an air gap shall be cut between the building to remain and the portion of the building to be demolished at the roof, floor levels and through the above grade walls prior to the demolition of the western portion of the building. The air gap shall be a minimum of 12 inches wide and also be wide enough that no debris can lodge in the gap and transfer vibrations into the portion of the building to remain. The contractor may elect to demolish an entire bay of the existing structure between two column lines so that additional shoring may be minimized or eliminated. This will prevent the transmission of vibrations from the demolition through the existing structural members and, therefore, limit the potential for structural damage due to the vibrations from the demolition. Any debris that becomes lodged in the gap shall be removed as soon as is safely possible.</p> <p>All documents prepared in accordance with this Measure shall be submitted to the City of Berkeley Planning and Development Department for approval, and all work required by this Measure shall be at the project sponsor's expense</p>			

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	<p>CR-4(b) Construction Monitoring. Prior to demolition, the historic preservation architect and structural engineer referenced in Mitigation Measures CR-4(a) shall undertake an existing condition study of the Shattuck Hotel, including the location and extent of any visible cracks or spalls. Any existing damage to the hollow clay tile that could cause structural damage due to construction vibrations shall be noted. This initial survey will serve as a baseline to determine if any damage would occur during demolition or construction of the new building. The documentation shall take the form of written descriptions and photographs, and shall include those physical characteristics of the resource that conveys its historic significance and that justify its inclusion on the local register. The documentation shall be reviewed and approved by the City of Berkeley Planning and Development Department.</p> <p>The historical architect and structural engineer shall monitor the Shattuck Hotel during construction and report any changes to existing conditions, including, but not limited to, expansion of existing cracks, new spalls, or other exterior deterioration. Any new cracks, new spalls, or other exterior deterioration shall be repaired to the pre-existing condition as indicated at the end of this section. Monitoring reports shall be submitted to the City of Berkeley Planning and Development Department on a periodic basis. The structural engineer shall consult with the historic preservation architect, especially if any problems with character-defining features of a historic resource are discovered. If in the opinion of the structural engineer, in consultation with the historic preservation architect, substantial adverse impacts to historic resources related to construction activities are found during</p>	<p>Applicant's historical architecture and structural engineering consultants</p> <p>City of Berkeley Planning Department, Land Use Division</p>	<p>Prior to the issuance of a demolition permit</p>	

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	<p>construction, the historical architect and structural engineer shall so inform the project sponsor or sponsor’s designated representative responsible for construction activities.</p> <p>Vibrations shall be limited during demolition of the existing below grade wall and foundation concrete so as not to transmit significant vibrations to the remaining structures. The use of jackhammers and smaller hoe-rams with lower impact force shall be used wherever possible to limit vibrations. Larger hoe-rams (rated at greater than 2,000 foot-pounds) shall not be used without a written determination by a qualified testing agency that such rams will not cause vibrations greater than 0.2 inches per second of vertical movement at the existing hotel. Measurements for vibrations shall be taken at the same distance to the vibration source as the Shattuck Hotel building will be from the source during use for construction or demolition. The testing agency used for measuring vibrations shall be experienced in measuring vibrations, as determined by the City of Berkeley Planning and Development Department.</p> <p>The areas where the demolition will be closest to the existing building and therefore most likely to propagate vibrations to the remaining structures are: demolition of the eastern end of the existing cinema building along Kittredge Street; demolition for the new construction below the hotel at the corner of Shattuck Avenue and Kittredge Street; and demolition of the eastern portion of the former Hink’s Department Store addition at Allston Way and Harold Way. At these areas where demolition of below grade concrete will be close to the remaining structures, the concrete shall be demolished</p>			

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	<p>using methods that limit vibrations, such as the use of jackhammers and small hoe-rams with lower impact force, even if it is determined that larger hoe-rams can be used elsewhere on the site.</p> <p>The structural engineer shall consult with the historic preservation architect, especially if any problems with character- defining features of a historic resource are discovered. Because of the inherent unpredictability of large-scale excavation and construction, there is an unlikely but possible chance that unforeseen damage would occur. If substantial adverse impacts to historic resources related to construction activities are found during construction, and if in the opinion of the structural engineer, in consultation with the historic preservation architect, the historical architect and the structural engineer (monitoring team) shall so inform the project sponsor or sponsor’s designated representative responsible for construction activities. The historical architect and the structural engineer shall make specific recommendations to the project sponsor, including whether work should stop and whether construction activities should be modified.</p> <p>Once the historic architect and the structural engineer inform the project sponsor, the project sponsor shall adhere to the monitoring team’s recommendations for corrective measures, including halting construction or using methods which cause less vibration, in situations where construction activities would imminently endanger historic resources. The City of Berkeley Planning and Development Department shall establish the frequency of monitoring and reporting. The project sponsor shall respond to any claims of damage by inspecting the affected property promptly, but in no</p>			

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	<p>case more than 5 working days after the claim was filed and received by the project sponsor. A sign shall be posted in a visible place onsite and a letter shall be sent to the hotel owner or manager specifying the monitoring team's contact information prior to the start of construction activities.</p> <p>Any new cracks or other changes in the Shattuck Hotel shall be compared to pre-construction conditions and a determination made as to whether the proposed project could have caused such damage. In the event that the project is demonstrated to have caused any damage, such damage shall be repaired to the pre-existing condition. Site visit reports and documents associated with claims processing shall be provided to the City of Berkeley Planning and Development Department.</p> <p>Monitoring reports shall be submitted to the City of Berkeley Planning and Development Department on a periodic basis. All work required by this Measure shall be at the project sponsor's expense.</p>			
	<p>CR-4(c) Training Program. The historic preservation architect referenced in Mitigation Measures CR-4(a) shall establish a training program for construction workers involved in the project that emphasizes the importance of protecting historic resources. This program shall include information on recognizing historic fabric and materials, and directions on how to exercise care when working around and operating equipment near the Shattuck Hotel, including storage of materials away from the historic building. It shall also include information on means to reduce vibrations from demolition and construction, and monitoring and reporting any potential problems that could affect the historic resource. A provision for establishing this</p>	<p>Applicant's preservation architecture and structural engineering consultants</p> <p>City of Berkeley Planning Department, Land Use Division</p>	<p>Prior to the issuance of a demolition permit</p>	

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	<p>training program shall be incorporated into the general contractor’s contract with the project applicant regarding construction of the project, and the contract provisions shall be reviewed and approved by the City of Berkeley Planning and Development Department. All work required by this Measure shall be at the project sponsor’s expense.</p>			
II. TRANSPORTATION/TRAFFIC				
<p>T-2 Development facilitated by the proposed project would increase future (years 2020 and 2035) traffic levels on the local circulation system. One of the 10 studied intersections would operate at levels of service that exceed its performance standards under the Year 2035 scenario.</p>	<p>T-2 Dedicated Right-Turn Pocket at Shattuck Avenue/Durant Avenue Intersection. The northbound outside lane at the intersection of Shattuck Avenue and Durant Avenue shall be restriped to provide a dedicated right-turn pocket by the applicant prior to issuance of Certificate of Occupancy.</p>	<p>Applicant shall obtain a permit for the restriping of this intersection</p> <p>City of Berkeley Public Works Department to review</p>	<p>Prior to issuance of Certificate of Occupancy.</p>	

Table 2: 2211 Harold Way Mixed-Use Project Infill Checklist Mitigation Monitoring and Reporting Program

Impacts	Mitigation Measures	Monitoring Responsibility	Monitoring Timing	Verification (Date and Initials)
I. AIR QUALITY				
<p>AIR-2 This proposed project may expose sensitive receptors to TACs or odors through development of new residential units near non-residential development that may be sources of TACs or odors near existing residences or other sensitive receptors.</p>	<p>AIR-2 Buffer TAC and Odor Emission Sources and Sensitive Land Uses. Consider potential air pollution and odor impacts from future development that may emit pollution and/or odors when locating (a) air pollution sources, and (b) residential and other pollution-sensitive land uses in the vicinity of air pollution sources (which may include areas where buses idle, diesel generators, parking garage vents, restaurants, and other similar uses). Buffer sensitive receptors from TACs whenever possible, and if buffering is not feasible, apply appropriate mitigation to reduce impacts to a less than significant level, such as air filtration systems or other technologies.</p>	<p>Applicant and Architect City of Berkeley Planning Department, Division of Public Works</p>	<p>Prior to the issuance of Building Permit</p>	
<p>AIR-3 The proposed project would result in temporary emissions of dust and diesel exhaust that may result in both nuisance and health impacts.</p>	<p>AIR-3 Implement BAAMD-Recommended Measures to Control PM₁₀ Emissions during Construction. Measures to reduce diesel particulate matter and PM₁₀ from construction are recommended to ensure that short-term health impacts to nearby sensitive receptors are avoided.</p> <p>Dust (PM₁₀) Control Measures:</p> <ul style="list-style-type: none"> • Water all active construction areas at least twice daily and more often during windy periods. Active areas adjacent to residences should be kept damp at all times. • Cover all hauling trucks or maintain at least two feet of freeboard. 	<p>Construction Contractor City of Berkeley Planning Department, Division of Public Works</p>	<p>During demolition, site preparation and project construction</p>	

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	<ul style="list-style-type: none"> • Pave, apply water at least twice daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas. • Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas and sweep streets daily (with water sweepers) if visible soil material is deposited onto the adjacent roads. • Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (i.e., previously-graded areas that are inactive for 10 days or more). • Enclose, cover, water twice daily, or apply (non-toxic) soil binders to exposed stockpiles. • Limit traffic speeds on any unpaved roads to 15 mph. • Replant vegetation in disturbed areas as quickly as possible. • Suspend construction activities that cause visible dust plumes to extend beyond the construction site. <p>Measures to Reduce Diesel Particulate Matter and PM_{2.5}:</p> <ul style="list-style-type: none"> • Clear signage at all construction sites will be posted indicating that diesel equipment standing idle for more than five minutes shall be turned off. This would include trucks waiting to deliver or receive soil, aggregate, or other bulk materials. Rotating drum concrete trucks could keep their engines running 			

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	<p>continuously as long as they were onsite or adjacent to the construction site.</p> <ul style="list-style-type: none"> • Opacity is an indicator of exhaust particulate emissions from off-road diesel powered equipment. The project shall ensure that emissions from all construction diesel powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately. • The contractor shall install temporary electrical service whenever possible to avoid the need for independently powered equipment (e.g., compressors). • Properly tune and maintain equipment for low emissions. 			
II. CULTURAL RESOURCES				
<p>CR-3 The proposed project would result in the destruction or disturbance of unidentified subsurface archaeological resources, which would represent a potentially significant impact.</p>	<p>CR-3 Halt Work/Archaeological Evaluation/Site-Specific Mitigation. If archaeological resources are uncovered during construction activities, all work within 50 feet of the discovery shall be redirected until a qualified archaeologist can be contacted to evaluate the situation, determine if the deposit qualifies as an archaeological resource, and provide recommendations. If the deposit does not qualify as an archaeological resource, then no further protection or study is necessary. If the deposit does qualify as an archaeological resource, then the impacts to the deposit shall be avoided by</p>	<p>Construction Contractor</p> <p>City of Berkeley Planning Department, Land Use Division</p>	<p>Throughout site preparation and ground disturbing activities of project construction, and in the event that archaeological resources are encountered on-site.</p>	

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	<p>project activities. If the deposit cannot be avoided, adverse impacts to the deposit must be mitigated. Mitigation may include, but is not limited to, archaeological data recovery. Upon completion of the archaeologist's assessment, a report should be prepared documenting the methods, findings and recommendations. The report should be submitted to the City, the project proponent and the NWIC.</p>			
<p>CR-4 The proposed project could result in the destruction of unidentified subsurface paleontological resources.</p>	<p>CR-4 Halt Work/Paleontological Evaluation/Site-Specific Mitigation. Should paleontological resources be encountered during construction or site preparation activities, such works shall be halted in the vicinity of the find. A qualified paleontologist shall be contacted to evaluate the nature of the find and determine if mitigation is necessary. All feasible recommendations of the paleontologist shall be implemented. Mitigation may include, but is not limited to, in-field documentation and recovery of specimen(s), laboratory analysis, the preparation of a report detailing the methods and findings of the investigation, and curation at an appropriate paleontological collection facility.</p>	<p>Construction Contractor City of Berkeley Planning Department, Land Use Division</p>	<p>Throughout site preparation and ground disturbing activities of project construction, and in the event that paleontological resources are encountered on-site.</p>	
<p>CR-5 The proposed project could result in the disturbance of unidentified subsurface human remains, which would represent a potentially significant impact.</p>	<p>CR-5 Halt Work/Coroner's Evaluation/Native American Heritage Consultation/Compliance with Most Likely Descendent Recommendations. If human remains are encountered during construction activities, all work within 50 feet of the remains should be redirected and the County Coroner notified immediately. At the same time, an archaeologist shall be contacted to assess the situation. If the human remains are of Native American origin, the Coroner must notify the Native American</p>	<p>Construction Contractor City of Berkeley Planning Department, Land Use Division</p>	<p>Throughout site preparation and ground disturbing activities of project construction, and in the event that unidentified subsurface human remains are encountered on-site.</p>	

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	<p>Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and any associated grave goods. The archaeologist shall recover scientifically-valuable information, as appropriate and in accordance with the recommendations of the MLD. Upon completion of the archaeologist's assessment, a report should be prepared documenting methods and results, as well as recommendations regarding the treatment of the human remains and any associated archaeological materials. The report should be submitted to the City, the project proponent and the NWIC.</p>			
<p>III. NOISE</p>				
<p>NOI-1 The proposed project under the DAP could be exposed to excessive noise levels, noise levels along many Downtown Area roadways would exceed those considered compatible with exterior residential land uses. This would represent a potentially significant impact. Where exterior noise levels exceed 70 dBA Ldn, such as along University Avenue and Shattuck Avenue, residential units would not be able to meet the 45-dBA Ldn interior</p>	<p>NOI-1 Site-Specific Noise Studies/Site Planning/Noise Control Treatments. Future residential units proposed under the DAP would be exposed to outdoor noise levels in excess of 60 dBA Ldn and indoor noise levels in excess of 45 dBA Ldn, which would exceed the City's and state's established land use compatibility thresholds. In areas where residential development would be exposed to an Ldn of greater than 60 dBA, site-specific noise studies should be conducted to determine the area of impact and to present appropriate mitigation measures, which may include the following:</p> <ul style="list-style-type: none"> Utilize site planning to minimize noise in shared residential outdoor activity areas by locating these areas behind the 	<p>City of Berkeley Planning Department, Land Use Division</p>	<p>Prior to the issuance of Building Permit</p>	

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<p>standard simply through typical construction methods. This would be a potentially significant impact. Retail units developed under the DAP along most of the area roadways would meet the exterior commercial land use compatibility guideline of 70 dBA Ldn established in the Noise Element. Exterior noise levels would exceed 70 dBA Ldn along University Avenue and Shattuck Avenue. This would be a potentially significant impact.</p>	<p>buildings, in courtyards, or orienting the terraces to alleyways rather than streets, whenever possible.</p> <ul style="list-style-type: none"> The California Building Code and the City of Berkeley require project specific acoustical analyses to achieve interior noise levels of 45 dBA Ldn or lower in residential units exposed to exterior noise levels greater than 60 dBA Ldn. Building sound insulation requirements would need to include the provision of forced-air mechanical ventilation in noise environments exceeding 70 dBA Ldn so that windows could be kept closed at the occupant's discretion to control noise. Special building construction techniques (e.g., sound-rated windows and building façade treatments) may be required where exterior noise levels exceed 65 dBA Ldn. These treatments include, but are not limited to, sound rated windows and doors, sound rated exterior wall assemblies, acoustical caulking, etc. The specific determination of what treatments are necessary will be conducted on a unit-by-unit basis during project design. Result of the analysis, including the description of the necessary noise control treatments, will be submitted to the City along with the building plans and approved prior to issuance of a building permit. Feasible construction techniques such as these would adequately reduce interior noise levels to 45 dBA Ldn or lower. Implementation of the above measure 			

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	would reduce the impact to a level of less than significant.			
<p>NOI-5 The proposed project would intermittently expose businesses and residences throughout the Downtown Area to high levels of noise throughout the planning horizon. Construction would elevate noise levels at adjacent businesses and residences by 15 to 20 dBA or more, significant impact.</p>	<p>NOI-5 Develop Site-Specific Noise-Reduction Programs and Implement Noise Abatement Measures During Construction. Prior to the issuance of building permits, the applicant shall develop a site specific noise reduction program prepared by a qualified acoustical consultant to reduce construction noise impacts to the maximum extent feasible, subject to review and approval of the Zoning Officer. The noise reduction program shall include appropriate time limits for construction (7:00 AM to 7:00 PM on weekdays and between the hours of 9:00 AM and 8:00 PM on weekends or holidays) as well as technically and economically feasible controls to meet the requirements of the Berkeley Municipal Code. The noise reduction program should include, but shall not be limited to, the following available controls to reduce construction noise levels as low as practical:</p> <ul style="list-style-type: none"> • Construction equipment should be well maintained and used judiciously to be as quiet as practical. • Equip all internal combustion engine-driven equipment with mufflers, which are in good condition and appropriate for the equipment. • Utilize “quiet” models of air compressors and other stationary noise sources where technology exists. Select hydraulically or electrically powered equipment and avoid pneumatically powered equipment where feasible. 	<p>City of Berkeley Planning Department, Land Use Division</p>	<p>Prior to the issuance of a Building Permit</p>	

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	<ul style="list-style-type: none"> • Locate stationary noise-generating equipment as far as possible from sensitive receptors when adjoining construction sites. Construct temporary noise barriers or partial enclosures to acoustically shield such equipment where feasible. • Prohibit unnecessary idling of internal combustion engines. • If impact pile driving is required, pre-drill foundation pile holes to minimize the number of impacts required to seat the pile. • Construct solid plywood fences around construction sites adjacent to operational business, residences or other noise-sensitive land uses where the noise control plan analysis determines that a barrier would be effective at reducing noise. • Erect temporary noise control blanket barriers, if necessary, along building facades facing construction sites. This mitigation would only be necessary if conflicts occurred which were irresolvable by proper scheduling. Noise control blanket barriers can be rented and quickly erected. • Route construction related traffic along major roadways and away from sensitive receptors where feasible • Businesses, residences or other noise-sensitive land uses within 500 feet of construction sites should be notified of 			

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	<p>the construction schedule in writing prior to the beginning of construction. Designate a “construction liaison” that would be responsible for responding to any local complaints about construction noise. The liaison would determine the cause of the noise complaints (e.g., starting too early, bad muffler, etc.) and institute reasonable measures to correct the problem. Conspicuously post a telephone number for the liaison at the construction site.</p>			
<p>NOI-6 The proposed project would expose residences, businesses, and historic structures within or in the vicinity of the Downtown Area to construction-related vibration during the excavation and foundation work of the buildings constructed during the DAP, a significant impact.</p>	<p>NOI-6 Avoidance of Pile-Driving/Site-Specific Vibration Studies/Monitoring/ Contingency Planning. The following measures are recommended to reduce vibration from construction activities:</p> <ul style="list-style-type: none"> • Avoid impact pile-driving where possible. Drilled piles causes lower vibration levels where geological conditions permit their use. • Avoid using vibratory rollers and tampers near sensitive areas. • In areas where project construction is anticipated to include vibration generating activities, such as pile-driving in close proximity to existing structures, site-specific vibration studies should be conducted to determine the area of impact and to present appropriate mitigation measures that may include the following: <ul style="list-style-type: none"> ○ Identification of sites that would include vibration compaction activities such as pile-driving and 	<p>City of Berkeley Planning Department, Land Use Division</p>	<p>Prior to the issuance of a Building Permit</p>	

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	<p>that have the potential to generate groundborne vibration, and the sensitivity of nearby structures to groundborne vibration. Vibration limits should be applied to all vibration-sensitive structures located within 200 feet of the project. A qualified structural engineer should conduct this task.</p> <ul style="list-style-type: none"> ○ Development of a vibration monitoring and construction contingency plan to identify structures where monitoring would be conducted, set up a vibration monitoring schedule, define structure-specific vibration limits, and address the need to conduct photo, elevation, and crack surveys to document before and after construction conditions ○ Construction contingencies would be identified for when vibration levels approached the limits. ○ At a minimum, vibration monitoring should be conducted during initial demolition activities and during pile-driving activities. Monitoring results may indicate the need for more or less intensive measurements. ○ When vibration levels approach limits, suspend construction and implement contingencies to either lower vibration levels or secure the affected structures. ○ Conduct post-survey on structure 			

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	<p>where either monitoring has indicated high levels or complaints of damage has been made. Make appropriate repairs or compensation where damage has occurred as a result of vibration.</p>			

