

## **EXHIBIT "B"**

### **CITY OF LONG BEACH DOWNTOWN PLAN**

#### **MITIGATION MONITORING AND REPORTING PROGRAM**

CEQA requires adoption of a monitoring and reporting program for the mitigation measures necessary to mitigate or avoid significant effects on the environment. The mitigation monitoring and reporting program is designed to ensure compliance with adopted mitigation measures during project implementation. For each mitigation measure recommended in the Final Environmental Impact Report (EIR) that applies to the applicant's proposal, specifications are made herein that identify the action required and the monitoring that must occur. In addition, the party for verifying compliance with individual mitigation measures is identified.

Mitigation Measure/Condition of Approval	Action Required	When Monitoring to Occur	Monitoring Frequency	Responsible Agency or Party	Compliance Verification	
					Initial	Date
<b>AESTHETICS</b>						
<p><b>Mitigation Measure AES-2(a) <u>Lighting Plans and Specifications.</u></b> Prior to the issuance of building permits for new large development projects, the applicant shall submit lighting plans and specifications for all exterior lighting fixtures and light standards to the Development Services Department for review and approval. The plans shall include a photometric design study demonstrating that all outdoor light fixtures to be installed are designed or located in a manner as to contain the direct rays from the lights onsite and to minimize spillover of light onto surrounding properties or roadways. All parking structure lighting shall be shielded and directed away from residential uses. Rooftop decks and other similar amenities are encouraged in the Plan. Lighting for such features shall be designed so that light is directed so as to provide adequate security and minimal spill-over or nuisance lighting.</p>	<p>Review and approval of final building plans for individual development projects.</p>	<p>Prior to issuance of building permits</p>	<p>Once per individual development project</p>	<p>PWD, LBDS</p>		
<p><b>Mitigation Measure AES-2(b) <u>Building Material Specifications.</u></b> Prior to the issuance of any building permits for development projects, applicants shall submit plans and specifications for all building materials to the Development Services Department for review and approval. The Plan provides measures to ensure that the highest quality materials are used for new development projects. This is an important consideration, since high-quality materials last longer. Quality development provides an impression of permanence and can encourage additional private investment in Downtown Long Beach.</p>	<p>Review and approval of final building plans for individual development projects</p>	<p>Prior to issuance of building permits</p>	<p>Once per individual development project</p>	<p>PWD, LBDS</p>		

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<p><b>Mitigation Measure AES-2(c) Light Fixture Shielding.</b> Prior to the issuance of building permits for development projects within the Downtown Plan Project area, applicants shall demonstrate to the Development Services Department that all night lighting installed on private property within the project site shall be shielded, directed away from residential and other light-sensitive uses, and confined to the project site. Rooftop lighting, including rooftop decks, security lighting, or aviation warning lights, shall be in accordance with Airport/Federal Aviation Administration (FAA) requirements. Additionally, all lighting shall comply with all applicable Airport Land Use Plan (ALUP) Safety Policies and FAA regulations.</p>	<p>Review and approval of final building plans for individual development projects</p>	<p>Prior to issuance of building permits</p>	<p>Once per individual development project</p>	<p>PWD, LBDS</p>			
<p><b>Mitigation Measure AES-2(d) Window Tinting.</b> Prior to the issuance of any building permits, the applicant shall submit plans and specifications showing that building windows are manufactured or tinted to minimize glare from interior lighting and to minimize heat gain in accordance with energy conservation measures.</p>	<p>Review and approval of final building plans for individual development projects</p>	<p>Prior to issuance of building permits</p>	<p>Once per individual development project</p>	<p>PWD, LBDS</p>			
<p><b>Mitigation Measure AES-3 Shadow Impacts.</b> Prior to the issuance of building permits for any structure exceeding 75 feet in height or any structure that is adjacent to a light sensitive use and exceeds 45 feet in height, the applicant shall submit a shading study that includes calculations of the extent of shadowing arches for winter and equinox conditions. If feasible, projects shall be designed to avoid shading of light sensitive uses in excess of the significance thresholds outlined in this EIR. If avoidance of shadows exceeding significance thresholds is determined to be infeasible, the shadow impact will be disclosed as part of a project environmental impact report (EIR).</p>	<p>Review and approval of shading studies for individual development projects</p>	<p>Prior to issuance of building permits</p>	<p>Once per individual development project</p>	<p>OCM, LBDS</p>			
<b>AIR QUALITY</b>							
<p><b>Mitigation Measure AQ-1(a)</b> To reduce short-term construction emissions, the City shall require that all construction projects that would require use of heavy-duty (50 horsepower [hp] or more) off-road vehicles to be used during construction shall require their contractors to implement the Enhanced Exhaust Control Practices (listed</p>	<p>Field verification of compliance for individual development projects</p>	<p>During construction</p>	<p>Periodically throughout construction of individual development projects</p>	<p>OCM</p>			

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<p>below) or whatever mitigation measures are recommended by SCAQMD at the time individual portions of the site undergo construction.</p> <p><u>Enhanced Exhaust Control Practices</u></p> <ul style="list-style-type: none"> <li>The project applicant shall provide a plan for approval by the City, demonstrating that the heavy-duty (50 hp or more) off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project-wide fleet-average 20 percent NO<sub>x</sub> reduction, 20 percent VOC reduction, and 45 percent particulate reduction compared to the 2011 ARB fleet average, as contained in the URBEMIS output sheets in Appendix C. Acceptable options for reducing emissions may include use of late-model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. SCAQMD, which is the resource agency for air quality in the Project area, can be used in an advisory role to demonstrate fleet-wide reductions. SCAQMD's mitigation measures for off-road engines can be used to identify an equipment fleet that achieves this reduction (SCAQMD 2007b).</li> <li>The project applicant shall submit to the City a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 hp, that would be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the hp rating, engine production year, and projected hours of use for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of heavy-duty off-road equipment, the project representative shall provide the City with the anticipated construction timeline including start date</li> </ul>						

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<p>and name and phone number of the project manager and onsite foreman. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed and the dates of each survey. SCAQMD staff and/or other officials may conduct periodic site inspections to determine compliance.</p> <ul style="list-style-type: none"> <li>If, at the time of construction, SCAQMD, CARB, or the EPA has adopted a regulation or new guidance applicable to construction emissions, compliance with the regulation or new guidance may completely or partially replace this mitigation if it is equal to or more effective than the mitigation contained herein, and if the City so permits. Such a determination must be supported by a project-level analysis and be approved by the City.</li> </ul>						
<p><b>Mitigation Measure AQ-1(b)</b> Prior to construction of each development phase of onsite land uses that are proposed within 1,500 feet of sensitive receptors, each project applicant shall perform a project-level CEQA analysis that includes a detailed LST analysis of construction-generated emissions of NO<sub>2</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub> to assess the impact at nearby sensitive receptors. The LST analysis shall be performed in accordance with applicable SCAQMD guidance that is in place at the time the analysis is performed. The project-level analysis shall incorporate detailed parameters of the construction equipment and activities, including the year during which construction would be performed, as well as the proximity of potentially affected receptors, including receptors proposed by the project that exist at the time the construction activity would occur.</p>	<p>Review and approval of LST analysis for individual development projects</p>	<p>Prior to issuance of building permits</p>	<p>Once per individual development project</p>	<p>OCM</p>		
<p><b>Mitigation Measure AQ-2</b> Mitigation to reduce mobile source emissions due to implementation of the Plan addresses reducing the number of motor vehicle trips and</p>	<p>Review and approval of final building plans for individual</p>	<p>Prior to issuance of building permits</p>	<p>Once per individual development</p>	<p>OCM, LBDS</p>		

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<p>reducing the emissions of individual vehicles under the control of the project applicant(s). The following measures shall be implemented by project applicant(s) unless it can be demonstrated to the City that the measures would not be feasible.</p> <ul style="list-style-type: none"> <li>The project applicant(s) for all project phases shall require the commercial development operator(s) to operate, maintain, and promote a ride-share program for employees of the various businesses.</li> <li>The project applicant(s) for all project phases shall include one or more secure bicycle parking areas within the property and encourage bicycle riding for both employees and customers.</li> <li>The proposed structures shall be designed to meet current Title 24 + 20 percent energy efficiency standards and shall include photovoltaic cells on the rooftops to achieve an additional 25 percent reduction in electricity use on an average sunny day.</li> <li>The City shall ensure that all new commercial developments include or have access to convenient shower and locker facilities for employees to encourage bicycle, walking, and jogging as options for commuting.</li> <li>The project applicant(s) for all project phases shall require that all equipment operated by the businesses within the facility be electric or use non-diesel engines.</li> <li>All truck loading and unloading docks shall be equipped with one 110/208-volt power outlet for every two-dock door. Diesel trucks shall be prohibited from idling more than 5 minutes and must be required to connect to the 110/208-volt power to run any auxiliary equipment. Signs outlining the idling restrictions shall be provided.</li> <li>If, at the time of construction, SCAQMD, CARB, or EPA has adopted a regulation or new guidance applicable to mobile- and area-source emissions, compliance with the regulation or new guidance may completely or partially replace this mitigation if it is equal to or more effective than</li> </ul>	development projects		project			

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<p>the mitigation contained herein, and if the City so permits. Such a determination shall be supported by a project-level analysis that is approved by the City.</p> <p><b>Mitigation Measure AQ-4(a)</b> The following measures shall be implemented to reduce exposure of sensitive receptors to operational emissions of TACs:</p> <ul style="list-style-type: none"> <li>Proposed commercial land uses that have the potential to emit TACs or host TAC-generating activity (e.g., loading docks) shall be located away from existing and proposed onsite sensitive receptors such that they do not expose sensitive receptors to TAC emissions that exceed an incremental increase of 10 in 1 million for the cancer risk and/or a noncarcinogenic Hazard Index of 1.0.</li> <li>Where necessary to reduce exposure of sensitive receptors to an incremental increase of 10 in 1 million for the cancer risk and/or a noncarcinogenic Hazard Index of 1.0, proposed commercial and industrial land uses that would host diesel trucks shall incorporate idling reduction strategies that reduce the main propulsion engine idling time through alternative technologies such as IdleAire, electrification of truck parking, and alternative energy sources for TRUs to allow diesel engines to be completely turned off.</li> <li>Signs shall be posted in at all loading docks and truck loading areas to indicate that diesel-powered delivery trucks must be shut off when not in use for longer than 5 minutes on the premises. This measure is consistent with the ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling, which was approved by the California Office of Administrative Law in January 2005.</li> <li>Proposed facilities that would require the long-term use of diesel equipment and heavy-duty trucks shall develop a plan to reduce emissions, which may include such measures as scheduling activities when the residential uses are the least occupied, requiring equipment to be shut off when not in use, and</li> </ul>	<p>Review and approval of applicant-prepared health risk studies and, as necessary, plans to reduce hazards to below specified risk levels</p>	<p>Prior to issuance of building permits</p>	<p>Once per individual development project involving potential TAC hazards</p>	<p>OCM, LBDS</p>		

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<ul style="list-style-type: none"> <li>prohibiting heavy trucks from idling.</li> <li>When determining the exact type of facility that would occupy the proposed commercial space, the City shall take into consideration its toxic-producing potential.</li> <li>Commercial land uses that accommodate more than 100 trucks per day, or 40 trucks equipped with TRUs, within 1,000 feet of sensitive receptors (e.g., residences or schools) shall perform a site-specific project-level HRA in accordance with SCAQMD guidance for projects generating or attracting vehicular trips, especially heavy-duty diesel-fueled vehicles (SCAQMD 2003b). If the incremental increase in cancer risk determined by the HRA exceeds the threshold of significance recommended by SCAQMD or ARB at the time (if any), then all feasible mitigation measures shall be employed to minimize the impact.</li> </ul>						
<p><b>Mitigation Measure AQ-4(b)</b> The City shall verify that the following measures are implemented by new developments to reduce exposure of sensitive receptors to emissions of TACs from POLB and stationary sources in the vicinity of the Downtown Plan Project area:</p> <ul style="list-style-type: none"> <li>All proposed residences in the Downtown Plan Project area shall be equipped with filter systems with high Minimum Efficiency Reporting Value (MERV) for removal of small particles (such as 0.3 micron) at all air intake points to the home. All proposed residences shall be constructed with mechanical ventilation systems that would allow occupants to keep windows and doors closed and allow for the introduction of fresh outside air without the requirement of open windows.</li> <li>The heating, ventilation, and air conditioning (HVAC) systems shall be used to maintain all residential units under positive pressure at all times.</li> <li>An ongoing education and maintenance plan about the filtration systems associated with HVAC shall be developed and implemented for residences.</li> <li>To the extent feasible, sensitive receptors shall be</li> </ul>	<p>Review and approval of applicant-prepared health risk studies and, as necessary, plans to reduce hazards to below specified risk levels</p>	<p>Prior to issuance of building permits</p>	<p>Once per individual development project involving potential health risks</p>	<p>OCM, LBDS</p>		

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<p>located as far away from the POLB as possible.</p> <p><b>Mitigation Measure AQ-5</b> The following additional guidelines, which are recommended in ARB's <i>Land Use Handbook: A Community Health Perspective</i> (ARB 2005) shall be implemented. The guidelines are considered to be advisory and not regulatory:</p> <p>Sensitive receptors, such as residential units and daycare centers, shall not be located in the same building as dry-cleaning operations that use perchloroethylene. Dry-cleaning operations that use perchloroethylene shall not be located within 300 feet of any sensitive receptor. A setback of 500 feet shall be provided for operations with two or more machines.</p> <p><b>Mitigation Measure AQ-6</b> The following mitigation measures shall be implemented to control exposure of sensitive receptors to operational odorous emissions. The City shall ensure that all project applicant(s) implement the following measures:</p> <ul style="list-style-type: none"> <li>The City shall consider the odor-producing potential of land uses when reviewing future development proposals and when the exact type of facility that would occupy areas zoned for commercial, industrial, or mixed-use land uses is determined. Facilities that have the potential to emit objectionable odors shall be located as far away as feasible from existing and proposed sensitive receptors.</li> <li>Before the approval of building permits, odor-control devices shall be identified to mitigate the exposure of receptors to objectionable odors if a potential odor-producing source is to occupy an area zoned for commercial land use. The identified odor-control devices shall be installed before the issuance of certificates of occupancy for the potentially odor-producing use. The odor-producing potential of a source and control devices shall be determined in coordination with SCAQMD and based on the number of complaints associated with existing sources of the</li> </ul>	<p>Review of individual development projects for consistency with ARB guidelines</p>	<p>Prior to issuance of building permits</p>	<p>Once per individual development project</p>	<p>OCM, LBDS</p>		
<p>Review and approval of final building plans and applicant-proposed odor control methods for individual development projects</p>	<p>Prior to issuance of building permits</p>	<p>Once per individual development project involving potential odor issues</p>	<p>OCM, LBDS</p>			

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<p>same nature.</p> <ul style="list-style-type: none"> <li>Truck loading docks and delivery areas shall be located as far away as feasible from existing and proposed sensitive receptors.</li> <li>Signs shall be posted at all loading docks and truck loading areas to indicate that diesel-powered delivery trucks must be shut off when not in use for longer than 5 minutes on the premises in order to reduce idling emissions. This measure is consistent with the ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling, which was approved by California's Office of Administrative Law in January 2005. (This measure is also required by Mitigation Measure AQ-4 to limit TAC emissions.)</li> <li>Proposed commercial and industrial land uses that have the potential to host diesel trucks shall incorporate idle-reduction strategies that reduce the main propulsion engine idling time through alternative technologies such as, IdleAire, electrification of truck parking, and alternative energy sources for TRUs to allow diesel engines to be completely turned off. (This measure is also required by Mitigation Measure AQ-4 to limit TAC emissions.)</li> </ul> <p>In addition, mitigation measures identified under AQ-4(b) to reduce indoor exposure to TACs would also result in a reduction in the intensity of offensive odors from the surrounding odor sources.</p>							
<b>CULTURAL RESOURCES</b>							
<p><b>Mitigation Measure CR-1(a)</b> The City shall encourage the designation as local landmarks of 21 properties identified in Table 4.3-3 with the "Desired Outcome" of "Pursue Local Designation." The City will encourage the on-going maintenance and appropriate adaptive reuse of all properties in Table 4.3-2 (existing landmarks), and Table 4.3-3 as historic resources.</p>	<p>Review and approval of final building plans involving potential historic resources</p>	<p>Prior to issuance of demolition permits</p>	<p>Once per individual development project with the potential to adversely affect historic resources</p>	<p>LBDS</p>			

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<p><b>Mitigation Measure CR-1(b)</b> The following procedures shall be followed prior to issuance of a demolition permit or a building permit for alteration of any property listed in the Historic Survey Report (ICF Jones &amp; Stokes 2009) by Status Code 3S, 3CS, 5S1, or 5S3; designated as a Historic Landmark (City of Long Beach 2010a); listed in Tables 4.3-2 and 4.3-3 of this PEIR, or other property 45 years of age or older that was not previously determined by the Historic Survey Report to be ineligible for National Register, California Register, or Local Landmark (Status Code 6L and 6Z):</p> <p><u>Notification of Historic Preservation Staff</u>                      Historic Preservation staff in the City Development Services Department shall be notified upon receipt of any demolition permit or building permit for alteration of any property listed in the Historic Survey Report or other property 45 years of age or older that was not previously determined by the Historic Survey Report to be ineligible for National Register, California Register, or Local Landmark (Status Code 6L and 6Z)</p> <p><u>Determination of Need for Historic Property Survey</u>                      In consultation with Historic Preservation staff, the City Development Services Department shall determine whether a formal historic property survey is needed and may require that the owner or applicant provide photographs of the property, including each building façade, with details of windows, siding, eaves, and streetscape views, and copies of the County Assessor and City building records, in order to make this determination.</p> <p><u>Determination of Eligibility</u>                      If City Development Services Department staff determines that the property may be eligible for designation, the property shall be referred to the Cultural Heritage Commission, whose determination of eligibility shall be considered as part of the environmental determination for the project in accordance with CEQA.</p>	<p>Verification that specified procedures have been followed for individual development projects involving historic properties and that appropriate mitigation has been undertaken</p>	<p>Prior to issuance of demolition permits</p>	<p>Once per individual development project with the potential to adversely affect historic resources</p>	<p>PWD, LBDS</p>		

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<p><b>Documentation Program</b></p> <p>If the Cultural Heritage Commission determines that the property is eligible for historic listing, the City Development Services Department shall, in lieu of preservation, require that prior to demolition or alteration a Documentation Program be prepared to the satisfaction of the City Development Services Department, which shall include the following:</p> <p>A. Photo Documentation Documentation shall include professional quality photographs of the structure prior to demolition with 35 mm black and white photographs, 4" x 6" standard format, taken of all four elevations and with close-ups of select architectural elements, such as but not limited to, roof/wall junctions, window treatments, decorative hardware, any other elements of the building's exterior or interior, or other property features identified by the City Development Services Department to be documented. Photographs shall be of archival quality and easily reproducible.</p> <p>B. Required Drawings Measured drawings of the building's exterior elevations depicting existing conditions or other relevant features shall be produced from recorded, accurate measurements. If portions of the building are not accessible for measurement or cannot be reproduced from historic sources, they should not be drawn, but clearly labeled as not accessible. Drawings shall be produced in ink on translucent material or archivally stable material (blue-line drawings are acceptable). Standard drawing sizes are 19" x 24" or 24" x 36" and standard scale is 1/4" = 1 foot.</p> <p>C. Archival Storage Xerox copies or CD of the photographs and one set of the measured drawings shall be submitted for archival storage with the City Development Services Department, and one set of original photographs,</p>						

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negatives, and measured drawings shall be submitted for archival storage with such other historical repository identified by the City Development Services Department.						
<b>Mitigation Measure CR-2(a)</b> A qualified project archaeologist or archaeological monitor approved by the City in advance of any ground-disturbing activities shall be present during excavation into native sediments and shall have the authority to halt excavation for inspection and protection of cultural resources. The archaeological monitor shall be empowered to halt or redirect ground-disturbing activities to allow the find to be evaluated. If the archaeological monitor determines the find to be significant, the project applicant and the City shall be notified and an appropriate treatment plan for the resources shall be prepared. The treatment plan shall include notification of a Native American representative and shall consider whether the resource should be preserved in place or removed to an appropriate repository as identified by the City.	Verification that a qualified monitor has been retained for individual development projects involving excavation in native sediments; field verification of monitoring	Verification that a monitor has been retained prior to issuance of demolition permit; field verification during construction	Once for verification that a monitor has been retained; periodically throughout construction for field verification	LBDS, OCM		
<b>Mitigation Measure CR-2(b)</b> The project archaeologist shall prepare a final report of the find for review and approval by the City and shall include a description of the resources unearthed, if any, treatment of the resources, and evaluation of the resources with respect to the California Register of Historic Resources and the National Register of Historic Places. The report shall be filed with the California Historic Resources Information System South Central Coastal Information Center. If the resources are found to be significant, a separate report including the results of the recovery and evaluation process shall be prepared.	Review and approval of report (if required)	Prior to re-initiating work (if resources unearthed)	As needed throughout construction	LBDS, OCM		
<b>Mitigation Measure CR-2(c)</b> If human remains are encountered during excavation and grading activities, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code Section	Verification that County Coroner and/or NAHC consultation has occurred (if human remains unearthed)	Prior to re-initiating work (if human remains unearthed)	As needed throughout construction	LBDS, OCM		

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5097.98. If the remains are determined to be of Native American descent, the corer is to notify the Native American Heritage Commission (NAHC) within 24 hours. The NAHC will then identify the person(s) thought to be the Most Likely Descendent, who will help determine what course of action should be taken in dealing with the remains. Preservation in place and project design alternatives shall be considered as possible courses of action by the project applicant, the City, and the Most Likely Descendent.						
<b>Mitigation Measure CR-3(a)</b> A qualified paleontologist approved by the City in advance of any ground-disturbing activities shall be present during excavation into native sediments and shall have the authority to halt excavation for inspection and protection of paleontological resources. Monitoring shall consist of visually inspecting fresh exposures of rock for fossil remains and, where appropriate, collection of sediment samples for further analysis. The frequency of inspections shall be based on the rate of excavation and grading activities, the materials being excavated, the depth of excavation, and, if found, the abundance and type of fossils encountered.	Verification that a qualified paleontologist has been retained for individual development projects involving excavation of native sediments; field verification of monitoring	Verification that a monitor has been retained prior to issuance of demolition permit, field verification during construction	Once for verification that a monitor has been retained; periodically throughout construction for field verification	LBDS, OCM		
<b>Mitigation Measure CR-3(b)</b> If a potential fossil is found, the paleontologist shall be allowed to temporarily divert or redirect excavation and grading in the area of the exposed fossil to evaluate and, if necessary, salvage the find. All fossils encountered and recovered shall be prepared to the point of identification and catalogued before they are donated to their final repository. Any fossils collected shall be donated to a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County and shall be accompanied by a report on the fossils collected and their significance, and notes, maps, and photographs of the salvage effort.	Verification that any paleontological resources identified during grading and construction of individual development projects have been appropriately salvaged	Prior to re-initiating work (if fossils unearthed)	As necessary throughout construction of individual development projects	LBDS, OCM		
<b>GEOLOGY AND SEISMICITY</b>						
<b>Mitigation Measure Geo-1</b> New construction or structural remodeling of buildings proposed within the Project area shall be engineered to withstand the expected ground	Review and approval of final building plans for individual	Prior to issuance of building permits	Once per individual development	PWD, OCM		

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<p>acceleration that may occur at the project site. The calculated design base ground motion for each project site shall take into consideration the soil type, potential for liquefaction, and the most current and applicable seismic attenuation methods that are available. All onsite structures shall comply with applicable provisions of the most recent UBC adopted by the City of Long Beach.</p> <p><b>Mitigation Measure Geo-2</b> Prior to issuance of a building permit for new structures, the City Department of Development Services shall determine, based on building height, depth, and location, whether a comprehensive geotechnical investigation and geo-engineering study shall be completed to adequately assess the liquefaction potential and compaction design of the soils underlying the proposed bottom grade of the structure. If a geotechnical investigation is required, borings shall be completed to at least 50 feet below the lowest proposed finished grade of the structure or 20 feet below the lowest caisson or footing (whichever is deeper). If these soils are confirmed to be prone to seismically induced liquefaction, appropriate techniques to minimize liquefaction potential shall be prescribed and implemented. All onsite structures shall comply with applicable methods of the UBC and California Building Code. Suitable measures to reduce liquefaction impacts could include specialized design of foundations by a structural engineer, removal or treatment of liquefiable soils to reduce the potential for liquefaction, drainage to lower the groundwater table to below the level of liquefiable soils, in-situ densification of soils, or other alterations to the sub-grade characteristics.</p> <p><b>Mitigation Measure Geo-3</b> Prior to issuance of a building permit for new structures, the City Department of Development Services shall determine the need for soil samples of final sub-grade areas and excavation sidewalls to be collected and analyzed for their expansion index. For areas where the expansion index is found to be greater than 20, grading and foundation designs shall be engineered to withstand the existing conditions. The expansion testing may be omitted if the grading and</p>	<p>development projects</p> <p>Review and approval of geotechnical investigations for individual development projects and verification that appropriate standards have been incorporated into final building plans</p> <p>Review and approval of final building plans for individual development projects</p>	<p>Geotechnical investigation and final building plan review prior to issuance of building permits</p> <p>Prior to issuance of building permits</p>	<p>project</p> <p>Once per individual development project</p> <p>Once per individual development project</p>	<p>PWD, OCM</p> <p>LBDS</p>		

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foundations are engineered to withstand the presence of highly expansive soils.						
<b>GREENHOUSE GAS EMISSIONS</b>						
<b>Mitigation Measure GHG-1(a) Implement Mitigation Measure AQ-1.</b> Implementation of the mitigation measures described in Section 4.2, Air Quality, of this PEIR, which would reduce construction emissions of criteria air pollutants and precursors, would also act to reduce GHG emissions associated with implementation of the Project. The construction mitigation measures for exhaust emissions are relevant to the global climate change impact because both criteria air pollutant and GHG emissions are frequently associated with combustion byproducts.	Review and approval of final building plans to verify compliance with applicable measures	Prior to issuance of building permits	Once per individual development project	LBDS		
<b>Mitigation Measure GHG-1(b) Implement Additional Measures to Control Construction-Generated GHG Emissions.</b> To further reduce construction-generated GHG emissions, the project applicant(s) of all public and private developments shall implement all feasible measures for reducing GHG emissions associated with construction that are recommended by the City and/or SCAQMD at the time individual portions of the site undergo construction. Such measures may reduce GHG exhaust emissions from the use of onsite equipment, worker commute trips, and truck trips carrying materials and equipment to and from the project site, as well as GHG emissions embodied in the materials selected for construction (e.g., concrete). Other measures may pertain to the materials used in construction. Prior to the construction of each development phase, the project applicant(s) shall obtain the most current list of GHG-reduction measures that are recommended by the City and/or SCAQMD and stipulate that these measures be implemented during the appropriate construction phase. The project applicant(s) for any particular development phase may submit to the City a report that substantiates why specific measures are considered infeasible for construction of that particular development phase and/or at that point in time. The	Verification that construction specifications include City and SCAQMD recommended measures; field verification of compliance	Construction specification review and approval prior to issuance of grading permits; field verification during construction	Once per individual development project for construction specification review/approval; field verification periodically throughout construction	LBDS, OCM		

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<p>report, including the substantiation for not implementing particular GHG-reduction measures, shall be approved by the City.</p> <p>The City's recommended measures for reducing construction-related GHG emissions at the time of writing this PEIR are listed below and the project applicant(s) shall, at a minimum, be required to implement the following:</p> <ul style="list-style-type: none"> <li>• Improve fuel efficiency from construction equipment:                             <ul style="list-style-type: none"> <li>○ reduce unnecessary idling (modify work practices, install auxiliary power for driver comfort),</li> <li>○ perform equipment maintenance (inspections, detect failures early, corrections),</li> <li>○ train equipment operators in proper use of equipment,</li> <li>○ use the proper size of equipment for the job, and</li> <li>○ use equipment with new technologies (repowered engines, electric drive trains).</li> </ul> </li> <li>• Use alternative fuels for electricity generators and welders at construction sites such as propane or solar, or use electrical power.</li> <li>• Use an ARB-approved low-carbon fuel, such as biodiesel or renewable diesel for construction equipment (emissions of NO<sub>x</sub> from the use of low carbon fuel must be reviewed and increases mitigated). Additional information about low-carbon fuels is available from ARB's Low Carbon Fuel Standard Program (ARB 2010a).</li> <li>• Encourage and provide carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes.</li> <li>• Reduce electricity use in the construction office by using compact fluorescent bulbs, powering off computers every day, and replacing heating and cooling</li> </ul>						

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<ul style="list-style-type: none"> <li>units with more efficient ones.</li> <li>Recycle or salvage non-hazardous construction and demolition debris (goal of at least 75 percent by weight).</li> <li>Use locally sourced or recycled materials for construction materials (goal of at least 20 percent based on costs for building materials, and based on volume for roadway, parking lot, sidewalk, and curb materials).</li> <li>Minimize the amount of concrete used for paved surfaces or use a low carbon concrete option.</li> <li>Produce concrete onsite if determined to be less emissive than transporting ready mix.</li> <li>Use EPA-certified SmartWay trucks for deliveries and equipment transport. Additional information about the SmartWay Transport Partnership Program is available from ARB's Heavy-Duty Vehicle GHG Measure (ARB 2010b) and EPA (EPA 2010).</li> <li>Develop a plan to efficiently use water for adequate dust control. This may consist of the use of non-potable water from a local source.</li> </ul>						
<p><b>Mitigation Measure GHG-2(a) Implement Mitigation Measure AQ-3.</b> Implementation of the mitigation measures described in Section 4.2, which would reduce operational emissions of criteria air pollutants and precursors, would also act to reduce GHG emissions associated with implementation of the Project. The operational mitigation measures for exhaust emissions are relevant to the global climate change impact because both criteria air pollutant and GHG emissions are frequently associated with combustion byproducts.</p>	<p>Verification that required measures have been incorporated into final building plans for individual development projects</p>	<p>Prior to issuance of building permits</p>	<p>Once per individual development project</p>	<p>LBDS</p>		
<p><b>Mitigation Measure GHG-2(b) Implement Additional Measures to Reduce Operational GHG Emissions.</b> For each increment of new development within the Project area requiring a discretionary approval (e.g., tentative subdivision map, conditional use permit, improvement plan), measures that reduce GHG emissions to the extent</p>	<p>Verification that required measures have been incorporated into final building plans for individual development</p>	<p>Prior to issuance of building permits</p>	<p>Once per individual development project</p>	<p>LBDS</p>		

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<p>feasible and to the extent appropriate with respect to the state's progress at the time toward meeting GHG emissions reductions required by the California Global Warming Solutions Act of 2006 (AB 32) shall be imposed, as follows:</p> <ul style="list-style-type: none"> <li>The project applicant shall incorporate feasible GHG reduction measures that, in combination with existing and future regulatory measures developed under AB 32, will reduce GHG emissions associated with the operation of future project development phases and supporting roadway and infrastructure improvements by an amount sufficient to achieve the goal of 6.6 CO<sub>2</sub>e/SP/year, if it is feasible to do so. The feasibility of potential GHG reduction measures shall be evaluated by the City at the time each phase of development is proposed to allow for ongoing innovations in GHG reduction technologies and incentives created in the regulatory environment.</li> <li>For each increment of new development, the project applicant shall obtain a list of potentially feasible GHG reduction measures to be considered in the development design from the City. The City's list of potentially feasible GHG reduction measures shall reflect the current state of the regulatory environment, which will continuously evolve under the mandate of AB 32. The project applicant(s) shall then submit to the City a mitigation report that contains an analysis demonstrating which GHG reduction measures are feasible for the associated reduction in GHG emissions, and the resulting CO<sub>2</sub>e/SP/year metric. The report shall also demonstrate why measures not selected are considered infeasible. The mitigation report must be reviewed and approved by the City for the project applicant(s) to receive the City's discretionary approval for the applicable increment of development. In determining what measures should appropriately be imposed by a local government under the circumstances, the following factors shall be</li> </ul>	<p>projects</p>					

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<p>considered:</p> <ul style="list-style-type: none"> <li>o The extent to which rates of GHG emissions generated by motor vehicles traveling to, from, and within the Project site are projected to decrease over time as a result of regulations, policies, and/or plans that have already been adopted or may be adopted in the future by ARB or other public agency pursuant to AB 32, or by EPA;</li> <li>o The extent to which mobile-source GHG emissions, which at the time of writing this PEIR comprise a substantial portion of the state's GHG inventory, can also be reduced through design measures that result in trip reductions and reductions in trip length;</li> <li>o The extent to which GHG emissions emitted by the mix of power generation operated by SCE, the electrical utility that will serve the Project site, are projected to decrease pursuant to the Renewables Portfolio Standard required by SB 1078 and SB 107, as well as any future regulations, policies, and/or plans adopted by the federal and state governments that reduce GHG emissions from power generation;</li> <li>o The extent to which replacement of CCR Title 24 with the California Green Building Standards Code or other similar requirements will result in new buildings being more energy efficient and consequently more GHG efficient;</li> <li>o The extent to which any stationary sources of GHG emissions that would be operated on a proposed land use (e.g., industrial) are already subject to regulations, policies, and/or plans that reduce GHG emissions, particularly any future regulations that will be developed as part of ARB's implementation of AB 32, or other pertinent regulations on stationary sources that have the indirect effect of reducing GHG emissions;</li> <li>o The extent to which the feasibility of existing GHG reduction technologies may change in the future, and</li> </ul>							

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<p>to which innovation in GHG reduction technologies will continue, effecting cost-benefit analyses that determine economic feasibility; and</p> <ul style="list-style-type: none"> <li>o Whether the total costs of proposed mitigation for GHG emissions, together with other mitigation measures required for the proposed development, are so great that a reasonably prudent property owner would not proceed with the project in the face of such costs.</li> <li>• In considering how much, and what kind of, mitigation is necessary in light of these factors, the following list of options shall be considered, though the list is not intended to be exhaustive, as GHG-emission reduction strategies and their respective feasibility are likely to evolve over time. These measures are derived from multiple sources including the Mitigation Measure Summary in Appendix B of the California Air Pollution Control Officer's Association (CAPCOA) white paper, <i>CEQA &amp; Climate Change</i> (CAPCOA 2008); CAPCOA's <i>Model Policies for Greenhouse Gases in General Plans</i> (CAPCOA 2009); and the California Attorney General's Office publication, <i>The California Environmental Quality Act: Addressing Global Warming Impacts at the Local Agency Level</i> (California Attorney General's Office 2010).</li> </ul> <p><b>Energy Efficiency</b></p> <ul style="list-style-type: none"> <li>o Include clean alternative energy features to promote energy self-sufficiency (e.g., photovoltaic cells, solar thermal electricity systems, small wind turbines).</li> <li>o Design buildings to meet CEC Tier II requirements (e.g., exceeding the requirements of Title 24 [as of 2007] by 20 percent).</li> <li>o Site buildings to take advantage of shade and prevailing winds and design landscaping and sun screens to reduce energy use.</li> <li>o Install efficient lighting in all buildings (including</li> </ul>						

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<p>residential). Also install lighting control systems, where practical. Use daylight as an integral part of lighting systems in all buildings.</p> <ul style="list-style-type: none"> <li>o Install light-colored "cool" pavements, and strategically located shade trees along all bicycle and pedestrian routes.</li> </ul> <p><b>Water Conservation and Efficiency</b></p> <ul style="list-style-type: none"> <li>o With the exception of ornamental shade trees, use water-efficient landscapes with native, drought-resistant species in all public area and commercial landscaping. Use water-efficient turf in parks and other turf-dependent spaces.</li> <li>o Install the infrastructure to use reclaimed water for landscape irrigation and/or washing cars.</li> <li>o Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls.</li> <li>o Design buildings and lots to be water efficient. Only install water-efficient fixtures and appliances.</li> <li>o Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff. Prohibit businesses from using pressure washers for cleaning driveways, parking lots, sidewalks, and street surfaces. These restrictions should be included in the Covenants, Conditions, and Restrictions of the community.</li> <li>o Provide education about water conservation and available programs and incentives.</li> <li>o To reduce storm water runoff, which typically bogs down wastewater treatment systems and increases their energy consumption, construct driveways to single-family detached residences and parking lots and driveways of multi-family residential uses, with pervious surfaces. Possible designs include Hollywood drives (two concrete strips with vegetation or aggregate in between) and/or the use of porous concrete, porous asphalt, turf blocks, or pervious</li> </ul>						

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<p>pavers.</p> <p><b>Solid Waste Measures</b></p> <ul style="list-style-type: none"> <li>○ Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).</li> <li>○ Provide interior and exterior storage areas for recyclables and green waste at all buildings.</li> <li>○ Provide adequate recycling containers in public areas, including parks, school grounds, golf courses, and pedestrian zones in areas of mixed-use development.</li> <li>○ Provide education and publicity about reducing waste and available recycling services.</li> </ul> <p><b>Transportation and Motor Vehicles</b></p> <ul style="list-style-type: none"> <li>○ Promote ride-sharing programs and employment centers (e.g., by designating a certain percentage of parking spaces for ride-sharing vehicles, designating adequate passenger loading zones and waiting areas for ride-share vehicles, and providing a website or message board for coordinating ride-sharing).</li> <li>○ Provide the necessary facilities and infrastructure in all land use types to encourage the use of low- or zero-emission vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling stations).</li> <li>○ At industrial and commercial land uses, all forklifts, "yard trucks," or vehicles that are predominately used onsite at non-residential land uses shall be electric-powered or powered by biofuels (such as biodiesel [B100]) that are produced from waste products, or shall use other technologies that do not rely on direct fossil fuel consumption.</li> </ul>						
<b>HAZARDS AND HAZARDOUS MATERIALS</b>						

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<p><b>Mitigation Measure Haz-1(a)</b> Prior to issuance of a demolition or renovation permit, a lead-based paint and asbestos survey shall be performed by a licensed sampling company. The lead-based paint survey shall be prepared for any structures pre-dating 1982; an asbestos survey shall be performed for asbestos-containing insulation for any structure pre-dating 1986; and an asbestos survey shall be performed for asbestos-containing drywall for all structures for which drywall is to be removed. All testing procedures shall follow California and federal protocol. The lead-based paint and asbestos survey report shall quantify the areas of lead-based paint and asbestos-containing materials pursuant to California and federal standards.</p>	<p>Review and approval of survey findings for individual development projects involving demolition of a pre-1986 structure; verification that abatement has been conducted</p>	<p>Prior to issuance of demolition permits</p>	<p>Once per individual development project involving demolition of a pre-1986 structure</p>	<p>LBDS</p>		
<p><b>Mitigation Measure Haz-1(b)</b> Prior to any demolition or renovation, onsite structures that contain asbestos must have the asbestos-containing material removed according to proper abatement procedures recommended by the asbestos consultant. All abatement activities shall be in compliance with California and federal OSHA and SCAQMD requirements. Only asbestos trained and certified abatement personnel shall be allowed to perform asbestos abatement. All asbestos-containing material removed from onsite structures shall be hauled to a licensed receiving facility and disposed of under proper manifest by a transportation company certified to handle asbestos. Following completion of the asbestos abatement, the asbestos consultant shall provide a report documenting the abatement procedures used, the volume of asbestos-containing material removed, where the material was moved to, and transportation and disposal manifests or dump tickets. The abatement report shall be prepared for the property owner or other responsible party and a copy shall be submitted to the City of Long Beach prior to issuance of a demolition or construction permit.</p>	<p>Review and approval of survey findings for individual development projects involving demolition of a pre-1986 structure; verification that abatement has been conducted</p>	<p>Prior to issuance of demolition permits</p>	<p>Once per individual development project involving demolition of a pre-1986 structure</p>	<p>LBDS</p>		
<p><b>Mitigation Measure Haz-1(c)</b> Prior to the issuance of a permit for the renovation or demolition of any structure, a licensed lead-based paint consultant shall be contracted to evaluate the structure for lead-based paint. If lead-</p>	<p>Review and approval of survey findings for individual development projects involving</p>	<p>Prior to issuance of demolition permit</p>	<p>Once per individual development project involving</p>	<p>LBDS, OCM</p>		

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<p>based paint is discovered, it shall be removed according to proper abatement procedures recommended by the consultant. All abatement activities shall be in compliance with California and federal OSHA and SCAQMD requirements. Only lead-based paint trained and certified abatement personnel shall be allowed to perform abatement activities. All lead-based paint removed from these structures shall be hauled and disposed of by a transportation company licensed to transport this type of material. In addition, the material shall be taken to a landfill or receiving facility licensed to accept the waste. Following completion of the lead-based paint abatement, the lead-based paint consultant shall provide a report documenting the abatement procedures used, the volume of lead-based paint removed, where the material was moved to, and transportation and disposal manifests or dump tickets. The abatement report shall be prepared for the property owner or other responsible party, with a copy submitted to the City of Long Beach prior to issuance of a demolition or construction permit.</p>	<p>demolition of a pre-1982 structure; verification that abatement has been conducted</p>		<p>demolition of a pre-1982 structure</p>			
<p><b>Mitigation Measure Haz-3(a)</b> All excavation and demolition projects conducted within the Project area shall be required to prepare a contingency plan to identify appropriate measures to be followed if contaminants are found or suspected or if structural features that could be associated with contaminants or hazardous materials are identified or discovered. The contingency plan shall identify personnel to be notified, emergency contacts, and a sampling protocol to be implemented. The excavation and demolition contractors shall be made aware of the possibility of encountering unknown hazardous materials and shall be provided with appropriate contact and notification information. The contingency plan shall include a provision stating under what circumstances it would be safe to continue with the excavation or demolition, and shall identify the person authorized to make that determination.</p>	<p>Review and approval of Contingency Plan prior to issuance of grading permits for individual development projects</p>	<p>Prior to issuance of grading permits</p>	<p>Once per individual development project</p>	<p>LBDS, OCM</p>		
<p><b>Mitigation Measure Haz-3(b)</b> If contaminants are detected, the results of the soil sampling shall be</p>	<p>Verification that a RWQCB de-water and</p>	<p>Prior to issuance of demolition</p>	<p>As necessary for individual</p>	<p>LBDS</p>		

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<p>forwarded to the local regulatory agency (Long Beach/Signal Hill Certified Unified Program Agency [CUPA], LARWQCB, or the state DTSC). Prior to any other ground disturbing activities at the site, the regulatory agency shall have reviewed the data and signed off on the property or such additional investigation or remedial activities that are deemed necessary have been completed and regulatory agency approval has been received.</p> <p>Groundwater is subject to pre-treatment during de-watering activities to meet National Pollutant Discharge Elimination System (NPDES) Construction Dewatering permit limits. The construction activities shall conform to the NPDES requirements. The RWQCB requires the water to be tested for possible pollutants. The developer shall collect groundwater samples from existing site wells to determine pre-treatment system requirements for extracted groundwater. A water treatment system shall be designed and installed for treatment of extracted groundwater removed during dewatering activities so that such water complies with the applicable RWQCB and NPDES permit standards before disposal.</p>	<p>discharge permit has been obtained for individual development projects (if necessary)</p>	<p>permits</p>	<p>development projects</p>			
<p><b>Mitigation Measure Haz-3(c)</b> If concentrations of contaminants warrant site remediation, contaminated materials shall be remediated either prior to construction of structures or concurrent with construction. The contaminated materials shall be remediated under the supervision of an environmental consultant licensed to oversee such remediation. The remediation program shall also be approved by a regulatory oversight agency (Long Beach/Signal Hill CUPA, LARWQCB, or the state DTSC). All proper waste handling and disposal procedures shall be followed. Upon completion of the remediation, the environmental consultant shall prepare a report summarizing the project, the remediation approach implemented, the analytical results after completion of the remediation, and all waste disposal or treatment manifests.</p>	<p>Verification that remediation has occurred for individual development projects (if necessary)</p>	<p>Prior to issuance of grading permits</p>	<p>As necessary for individual development projects</p>	<p>LBDS</p>		

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<p><b>Mitigation Measure Haz-3(d)</b> If during the soil sampling, groundwater contamination is suspected or soil contamination is detected at depths at which groundwater could be encountered during demolition or construction, a groundwater sampling assessment shall be performed. If contaminants are detected in groundwater at levels that exceed maximum contaminant levels for those constituents in drinking water, or if the contaminants exceed health risk standards such as Preliminary Remediation Goals, 1 in 1 million cancer risk, or a health risk index above 1, the results of the groundwater sampling shall be forwarded to the appropriate regulatory agency (Long Beach/Signal Hill CUPA, LARWQCB, or the State DTSC). Prior to any other ground-disturbing activities at the site, the regulatory agency shall have reviewed the data and signed off on the property or such additional investigation or remedial activities that are deemed necessary have been completed and regulatory agency approval has been received.</p>	<p>Verification that site closure has been obtained from the applicable regulatory body for individual development projects</p>	<p>Review prior to issuance of demolition permit; field verification during construction</p>	<p>Review, as needed throughout construction for field verification</p>	<p>LBDS</p>		
<b>HYDROLOGY AND WATER QUALITY</b>						
<p><b>Mitigation Measure Hydro-1</b> Prior to issuance of a grading permit, the City Department of Development Services shall determine the need for the developer to prepare a SWPPP for the site. If required, the SWPPP shall be submitted for review and approval by the Department of Development Services prior to the issuance of any grading or building permits. The SWPPP shall fully comply with City and LARWQCB requirements and shall contain specific BMPs to be implemented during project construction to reduce erosion and sedimentation to the maximum extent practicable. The following BMPs or equivalent measures to control pollutant runoff shall be included within the project's grading and construction plans, if applicable:</p> <p><u>Pollutant Escape: Deterrence</u></p> <ul style="list-style-type: none"> <li>Cover all storage areas, including soil piles, fuel and chemical depots. Protect from rain and wind with plastic</li> </ul>	<p>Review and approval of final grading and construction plans for individual development projects to verify compliance with applicable SWPPP requirements</p>	<p>Prior to issuance of grading permits</p>	<p>Once per individual development project for which an SWPPP is required</p>	<p>LBDS, OCM</p>		

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<p>sheets and temporary roofs.</p> <ul style="list-style-type: none"> <li>Implement tracking controls to reduce the tracking of sediment and debris from the construction site. At a minimum, entrances and exits shall be inspected daily and controls implemented as needed.</li> <li>Implement street sweeping and vacuuming as needed and as required.</li> </ul> <p><u>Pollutant Containment Areas</u></p> <ul style="list-style-type: none"> <li>Locate all construction-related equipment and related processes that contain or generate pollutants (i.e., fuel, lubricants, solvents, cement dust, and slurry) in isolated areas with proper protection from escape.</li> <li>Locate construction-related equipment and processes that contain or generate pollutants in secure areas, away from storm drains and gutters.</li> <li>Place construction-related equipment and processes that contain or generate pollutants in bermed and plastic-lined depressions to contain all materials within that site in the event of accidental release or spill.</li> <li>Park, fuel, and clean all vehicles and equipment in one designated, contained area.</li> </ul> <p><u>Pollutant Detainment Methods</u></p> <ul style="list-style-type: none"> <li>Protect downstream drainages from escaping pollutants by capturing materials carried in runoff and preventing transport from the site. Examples of detainment methods that retard movement of water and separate sediment and other contaminants are silt fences, hay bales, sand bags, berms, and silt and debris basins.</li> </ul> <p><u>Recycling/Disposal</u></p> <ul style="list-style-type: none"> <li>Develop a protocol for maintaining a clean site. This includes proper recycling of construction-related materials and equipment fluids (i.e., concrete dust, cutting slurry, motor oil, and lubricants).</li> <li>Provide disposal facilities. Develop a protocol for cleanup and disposal of small construction wastes (i.e.,</li> </ul>						

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<p>dry concrete).</p> <p><u>Hazardous Materials Identification and Response</u></p> <ul style="list-style-type: none"> <li>Develop a protocol for identifying risk operations and materials. Include protocol for identifying source and distribution of spilled materials.</li> <li>Provide a protocol for proper clean-up of equipment and construction materials, and disposal of spilled substances and associated cleanup materials.</li> <li>Provide an emergency response plan that includes contingencies for assembling response teams and immediately notifying appropriate agencies.</li> </ul>						
<p><b>Mitigation Measure Hydro-2</b> Prior to issuance of a building permit, the Department of Development Services shall determine the need for the developer to prepare a SUSMP for the site. If required, the SUSMP shall be submitted for review and approval by the Department of Development Services prior to the issuance of any building permits. The City's review shall include a determination of whether installation of pollutant removal technology in existing or proposed storm drains adjacent to the project site should be required. The City's review is required to confirm that the SUSMP is consistent with the City's NPDES Permit No. CAS 004003 or a subsequently issued NPDES permit applicable at the time of project construction. A SUSMP consistent with the City's NPDES permit shall be incorporated into the project design plans prior to issuance of any building permits.</p>	<p>Review and approval of SUSMP for individual development projects for which an SUSMP is required</p>	<p>prior to issuance of grading permits</p>	<p>Once per individual development project for which an SUSMP is required</p>	<p>LBDS</p>		
<p><b>Mitigation Measure Hydro-3</b> Prior to issuance of a building permit, the City Stormwater Management Division shall determine the need for the developer to conduct an analysis of the existing stormwater drainage system and to identify improvements needed to accommodate any projected increased runoff that would result from the proposed Project. The evaluation conducted by the developer shall include a determination of whether Low Impact Development (LID) practices and strategies should be incorporated into the project to reduce post-</p>	<p>Verification that required review of storm drain systems has been conducted for individual development projects and that needed improvements have been incorporated</p>	<p>Prior to issuance of building permits</p>	<p>Once per individual development project</p>	<p>LBDS, PWD</p>		

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development peak stormwater runoff discharge rates to not exceed the estimated pre-development discharge rates.							
<b>NOISE</b>							
<p><b>Mitigation Measure Noise-1(a)</b> The following measures shall be applied to proposed construction projects that are determined to have potential noise impacts from removal of existing pavement and structures, site grading and excavation, pile driving, building framing, and concrete pours and paving:</p> <ul style="list-style-type: none"> <li>All internal combustion-engine-driven equipment shall be equipped with mufflers that are in good operating condition and appropriate for the equipment.</li> <li>"Quiet" models of air compressors and other stationary construction equipment shall be employed where such technology exists.</li> <li>Stationary noise-generating equipment shall be located as far as reasonable from sensitive receptors when sensitive receptors adjoin or are within 150 feet of a construction site.</li> <li>Unnecessary idling of internal combustion engines (i.e., in excess of 5 minutes) shall be prohibited.</li> <li>Foundation pile holes shall be predrilled, as feasible based on geologic conditions, to minimize the number of impacts required to seat the pile.</li> <li>Construction-related traffic shall be routed along major roadways and away from noise-sensitive receptors.</li> <li>Construction activities, including the loading and unloading of materials and truck movements, shall be limited to the hours specified in the City Noise Ordinance (Section 8.80.202).</li> <li>Businesses, residences, and noise-sensitive land uses within 150 feet of construction sites shall be notified of the construction. The notification shall describe the activities anticipated, provide dates and hours, and</li> </ul>	<p>Verification that construction specifications for individual development projects incorporate applicable requirements; field verification of compliance</p>	<p>Construction specification review prior to issuance of demolition permits; field verification during construction</p>	<p>Once per individual development project for construction specification review; field verification periodically throughout construction of individual development projects</p>	<p>LBDS, OCM</p>			

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<p>provide contact information with a description of the complaint and response procedure.</p> <ul style="list-style-type: none"> <li>Each project implemented as part of the Plan shall 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. A telephone number for the liaison shall be conspicuously posted at the construction site.</li> <li>If a noise complaint(s) is registered, the liaison, or project representative, shall retain a City-approved noise consultant to conduct noise measurements at the location that registered the complaint. The noise measurements shall be conducted for a minimum of 1 hour and shall include 1-minute intervals. The consultant shall prepare a letter report summarizing the measurements and potential measures to reduce noise levels to the maximum extent feasible. The letter report shall include all measurement and calculation data used in determining impacts and resolutions. The letter report shall be provided to code enforcement for determining the adequacy and if the recommendations are adequate.</li> </ul>						
<p><b>Mitigation Measure Noise-1(b)</b> The City will require the following measures, where applicable based on noise level of source, proximity of receptors, and presence of intervening structures, to be incorporated into contract specifications for construction projects within 150 feet of existing residential uses implemented under the proposed Plan:</p> <ul style="list-style-type: none"> <li>Temporary noise barriers shall be constructed around construction sites adjacent to, or within 150 feet of, operational business, residences, or other noise-sensitive land uses. Temporary noise barriers shall be constructed of material with a minimum weight of 4 pounds per square foot with no gaps or perforations.</li> </ul>	<p>Verification that construction specifications for individual development projects within 150 feet of noise sensitive uses incorporate applicable requirements; field verification of compliance</p>	<p>Construction specification review prior to issuance of demolition permits; field verification during construction</p>	<p>Once per individual development project for construction specification review; field verification periodically throughout construction of individual development</p>	<p>LBDS, OCM</p>		

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<p>Noise barriers may be constructed of, but are not limited to, 5/8-inch plywood, 5/8-inch oriented strand board, or hay bales.</p> <p>If a project-specific noise analysis determines that the barriers described above would not be sufficient to avoid a significant construction noise impact, a temporary sound control blanket barrier, shall be erected along building façades facing construction sites. This mitigation would only be necessary if conflicts occurred that were irresolvable by proper scheduling and other means of noise control were unavailable. The sound blankets are required to have a minimum breaking and tear strength of 120 pounds and 30 pounds, respectively. The sound blankets shall have a minimum sound transmission classification of 27 and noise reduction coefficient of 0.70. The sound blankets shall be of sufficient length to extend from the top of the building and drape on the ground or be sealed at the ground. The sound blankets shall have a minimum overlap of 2 inches.</p>			projects			
<p><b>Mitigation Measure Noise-2</b> The City shall review all construction projects for potential vibration-generating activities from demolition, excavation, pile-driving, and construction within 100 feet of existing structures and shall require site-specific vibration studies to be conducted to determine the area of impact and to identify appropriate mitigation measures. The studies shall, at a minimum, include the following:</p> <ul style="list-style-type: none"> <li>• Identification of the project's vibration compaction activities, pile driving, and other vibration-generating activities that have the potential to generate ground-borne vibration; and the sensitivity of nearby structures to ground-borne vibration. This task should be conducted by a qualified structural engineer.</li> <li>• A vibration monitoring and construction contingency plan to identify structures where monitoring would be conducted; establish a vibration monitoring schedule; define structure-specific vibration limits; and address the need to conduct photo, elevation, and crack surveys</li> </ul>	<p>Verification that vibration analysis and monitoring/contingency plans have been prepared for individual development projects; verification, including field verification, that post-construction surveys have been conducted and any vibration-related damage has been repaired</p>	<p>Verification that vibration analysis and plan prepared prior to issuance of demolition/grading permits; verification that post-construction survey conducted prior to issuance of occupancy permits</p>	<p>Once per individual development project for vibration analysis/plan; once post-construction survey</p>	<p>LBDS, OCM</p>		

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<p>to document before and after construction conditions. Construction contingencies shall be identified for actions to be taken when vibration levels approached the defined vibration limits.</p> <ul style="list-style-type: none"> <li>Maintain a monitoring log of vibrations during initial demolition activities and during pile driving activities. Monitoring results may indicate the need for a more or less intensive measurement schedule.</li> <li>Vibration levels limits for suspension of construction activities and implementation of contingencies to either lower vibration levels or secure the affected structures.</li> <li>Post-construction survey on structures where either monitoring has indicated high vibration levels or complaints of damage have been made. Make appropriate repairs or compensation where damage has occurred as a result of construction activities.</li> </ul>						
<p><b>Mitigation Measure Noise-5</b> In areas where new residential development would be exposed to <math>L_{dn}</math> of greater than 65 dBA, the City will require site-specific noise studies prior to issuance of building permits to determine the area of impact and to present appropriate mitigation measures, which may include, but are not limited to the following:</p> <ul style="list-style-type: none"> <li>Utilize site planning to minimize noise in shared residential outdoor activity areas by locating the areas behind the buildings or in courtyards, or orienting the terraces to alleyways rather than streets, whenever possible.</li> <li>Provide mechanical ventilation in all residential units proposed along roadways or in areas where noise levels could exceed 65 dBA <math>L_{dn}</math> so that windows can remain closed at the choice of the occupants to maintain interior noise levels below 45 dBA <math>L_{dn}</math>.</li> </ul> <p>Install sound-rated windows and construction methods to provide the requisite noise control for residential units proposed along roadways or in areas where noise levels could exceed 70 dBA <math>L_{dn}</math>.</p>	<p>Review and approval of acoustical analysis for individual residential development projects; verification that final building plans incorporate recommended noise reduction techniques</p>	<p>Prior to issuance of building permits</p>	<p>Once per individual residential development project</p>	<p>LBDS, OCM</p>		

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<p><b>Mitigation Measure Noise-6</b> In areas where new residential development would be located adjacent to commercial uses, the City will require site-specific noise studies prior to issuance of building permits to determine the area of impact and to present appropriate mitigation measures, which may include, but are not limited to the following:</p> <ul style="list-style-type: none"> <li>Require the placement of loading and unloading areas so that commercial buildings shield nearby residential land uses from noise generated by loading dock and delivery activities. If necessary, additional sound barriers shall be constructed on the commercial sites to protect nearby noise sensitive uses.</li> <li>Require the placement of all commercial HVAC machinery to be placed within mechanical equipment rooms wherever possible.</li> </ul> <p>Require the provision of localized noise barriers or rooftop parapets around HVAC, cooling towers, and mechanical equipment so that line-of-sight to the noise source from the property line of the noise sensitive receptors is blocked.</p>	<p>Review and approval of acoustical analysis for individual residential development projects; verification that final building plans incorporate recommended noise reduction techniques</p>	<p>Prior to issuance of building permits</p>	<p>Once per individual residential development project</p>	<p>LBDS, OCM</p>		
<p><b>Traffic and Circulation</b></p>						
<p><b>Mitigation Measure Traf-1(a)</b> As the system's capacity is reached, it will become important to manage the street system in a more efficient and coordinated manner. Improvements to the Project area transportation system are proposed as part of the overall Downtown development, including improvements that have been required of other area projects previously approved by the City. Therefore, the mitigation focuses on improvements that would not require significant additional rights-of-way and are achievable within the life of the Plan. There are five proposed mitigation measures for the Downtown Plan, as follows:</p> <ol style="list-style-type: none"> <li>Implement traffic control system improvements in Downtown on selected arterials.</li> </ol>	<p>Review of the traffic impacts of individual development projects to determine whether listed improvements are needed at that time; implementation of planned improvements as necessary</p>	<p>Prior to issuance of occupancy permits</p>	<p>Once per individual development project</p>	<p>PWD, LBDS</p>		

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<p>2. Improve the Alamitos Avenue corridor via removal of selected parking spaces and the implementation of additional travel lanes plus bike lanes in each direction.</p> <p>3. Reconfigure the 6th Street and 7th Street intersections with Martin Luther King Avenue and Alamitos Avenue for safety and traffic flow enhancements.</p> <p>4. Enhance freeway access to I-710 to and from Downtown Long Beach.</p> <p>5. Implement transit facilities and programs to encourage public transit usage and Transportation Demand Management Policies.</p>						
<p><b>Mitigation Measure Traf-1(b)</b> A series of traffic signal system improvements are recommended in Downtown to accommodate the anticipated growth in travel. The following traffic signal system improvements are recommended as part of this mitigation measure:</p> <p>1. Implement Adaptive Traffic Signal Control System (ATCS) improvements throughout Downtown consistent with currently planned improvements on Ocean Boulevard and Atlantic Avenue. Streets that are proposed to be included in the ATCS as a mitigation measure for the Downtown Long Beach Strategic Plan include the following:</p> <ul style="list-style-type: none"> <li>• Alamitos Avenue north of Ocean Boulevard</li> <li>• Pine Avenue north of Ocean Boulevard</li> <li>• Pacific Avenue north of Ocean Boulevard</li> <li>• 7th Street from I-710 to Alamitos Avenue</li> <li>• 6th Street from I-710 to Alamitos Avenue</li> <li>• Broadway from I-710 to Alamitos Avenue</li> <li>• Ocean Boulevard from Shoreline to Alamitos Avenue (to join the proposed system starting at Alamitos Avenue)</li> <li>• Others as needed, to be determined by the City</li> </ul>	<p>Review of the traffic impacts of individual development projects to determine whether listed improvements are needed at that time; implementation of planned improvements as necessary</p>	<p>Prior to issuance of occupancy permits</p>	<p>Once per individual development project</p>	<p>PWD, LBDS</p>		

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<p>Traffic Engineer and Public Works Director</p> <p>2. Implement pan/tilt/zoom Closed Circuit Television Camera (CCTV) surveillance and communications with power and control capability to the Department of Public Works to monitor real-time traffic operations from rooftops of selected new buildings as needed and to be determined based on the location of appropriate new high-rise structures along the Alamitos Avenue, Shoreline Drive, and Ocean Boulevard corridors.</p> <p>3. Implement transit signal priority for Long Beach Boulevard and upgrade traffic signal system equipment and operations along the Blue Line light rail route.</p> <p>4. Upgrade and improve traffic signal equipment throughout Downtown for safety and operational enhancements.</p> <p><b>Mitigation Measure Traf-1(c)</b> As part of this mitigation measure, a number of intersections would receive major or minor signal modifications, depending on their current status. In addition to the enhancements listed, other potential improvements that can be included are:</p> <ul style="list-style-type: none"> <li>• Bicycle improvements (detection, signalization, etc.)</li> <li>• In-pavement LED crosswalk lights</li> <li>• Automatic pedestrian detection (i.e., infrared, microwave, or video detection)</li> <li>• Illuminated push buttons</li> <li>• Countdown pedestrian signals</li> <li>• Adaptive pedestrian clearance (increasing the flashing DON'T WALK time based on location of pedestrians in the crosswalk)</li> <li>• Enhanced signal equipment including mast arms, poles, signal heads, and other necessary enhancements for safety and operations</li> </ul> <p>Communications enhancements as needed to tie the system together with the Traffic Control Center in City Hall</p>	<p>Review of the traffic impacts of individual development projects to determine whether listed improvements are needed at that time; implementation of planned improvements as necessary</p>	<p>Prior to issuance of building permits</p>	<p>Once per individual development project</p>	<p>PWD, LBDS</p>		

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<p><b>Mitigation Measure Traf-1(d) Traffic Calming and Pedestrian Amenities.</b> Appropriate traffic calming and pedestrian amenities shall be provided in conjunction with development projects. Potential improvements include corner curb extensions, enhanced paving of crosswalks, and pedestrian-activated signals at mid-block crossings to make it easier for pedestrians to cross the street and to make them more visible to motorists. Other potential improvements include wider sidewalks in locations where the existing sidewalks are less than 10 feet wide, pedestrian-scale street lights, and street furniture (City of Long Beach 2005).</p>	<p>Review and approval of improvement plans for individual development projects to verify compliance with City requirements</p>	<p>Prior to issuance of building permits</p>	<p>Once per individual development project</p>	<p>PWD</p>			
<p><b>Traf-1(e)</b> Currently, due to on-street parking, there is only one lane of travel on Alamitos Avenue in the southbound direction between 3rd Street and Broadway. Parking spaces on the west side of Alamitos Avenue will be removed, the street will be restriped and reconstructed, a bike lane will be added in each direction of travel, and the street will provide for two travel lanes in each direction plus exclusive left turn lanes from 7th Street to Ocean Boulevard. Traffic signal enhancements to implement the Alamitos Avenue improvements shall also be implemented as needed.</p>	<p>Review of the traffic impacts of individual development projects to determine whether listed improvements are needed at that time; implementation of planned improvements as necessary</p>	<p>Prior to issuance of building permits</p>	<p>Once per individual development project</p>	<p>PWD, LBDS</p>			
<p><b>Traf-1(f)</b> Developments in the project area will be required to coordinate with area transit providers to accommodate and encourage transit use by residents and patrons. For non-residential sites, appropriate programs and facilities will be included to encourage car and van pooling, provide information on transportation alternatives, and encourage trip reduction strategies in accordance with the City's TDM policies for non-residential development.</p>	<p>Review and approval of improvement plans for individual development projects to verify compliance with City requirements</p>	<p>Prior to issuance of building permits</p>	<p>Once per individual development project</p>	<p>PWD, LBDS</p>			
<b>UTILITIES/SERVICE SYSTEMS</b>							
<p><b>Mitigation Measure Utilities-3(a)</b> All construction related to Project implementation shall include verification by the construction contractor that all companies providing waste disposal services recycle all demolition and construction-related wastes. The contract specifying recycled waste service shall be submitted to the City Building Official prior</p>	<p>Verification that construction specifications for individual development projects include use of a waste disposal</p>	<p>Prior to issuance of demolition or building permits</p>	<p>Once per individual development project</p>	<p>LBDS</p>			

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to approval of the certificate of occupancy	company that recycles demolition and construction wastes					
<b>Mitigation Measure Utilities-3(b)</b> In order to facilitate onsite separation and recycling of construction related wastes, all construction contractors shall provide temporary waste separation bins onsite during demolition and construction.	Review and approval of construction waste management plan for individual development projects; field verification of compliance	Review and approval of construction waste management plan prior to issuance of demolition permit; field verification during construction	Once per individual development project for plan review; periodically throughout construction	LBDS, OCM		
<b>Mitigation Measure Utilities-3(c)</b> All future developments in the Project area shall include recycling bins at appropriate locations to promote recycling of paper, metal, glass, and all other recyclable materials. Materials from these bins shall be collected on a regular basis consistent with the City's refuse disposal program.	Review and approval of final building plans for individual development projects; field verification of compliance	Building plan review and approval prior to issuance of building permit; field verification of occupancy permits	Once per individual development project for building plan review and approval; once for field verification	LBDS		
<b>Mitigation Measure Utilities-3(d)</b> All Project area residents and commercial tenants shall be provided with educational materials on the proper management and disposal of household hazardous waste, in accordance with educational materials made available by the Los Angeles County Department of Public Works.	Verification that educational materials are made available to project occupants of individual development projects	Prior to issuance of occupancy permits	Once per individual development project	LBDS		

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