

Riverfront Mixed-Use Project EIR Mitigation Measures	Riverfront Spirit Living Applicability
<p>AIR-1: Require implementation of the following measures during construction:</p> <ul style="list-style-type: none"> a) All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day or to maintain a minimum soil moisture of 12%. b) All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph. c) The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time. d) All trucks and equipment, including their tires, shall be washed off prior to leaving the site. e) All haul trucks transporting soil, sand, or other loose material off-site shall be covered. f) All visible mud or dirt tracked-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping shall be prohibited. g) All vehicle speeds on unpaved roads shall be limited to 15 miles per hour. h) Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel. i) All paving shall be completed as soon as possible after pipeline replacement work is finished. j) Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 2 minutes (California airborne toxics control measure Title 13, section 2485 of California Code of Regulations (CCR) establishes a maximum idling time of 5 minutes). Clear signage shall be provided for construction workers at all access points. l) All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. m) Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations. n) Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established. o) Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings). k) All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading, unless seeding or soil binders are used. 	<p>Applicable. MM AIR-1 is incorporated as a project condition of approval.</p>

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<p>AIR-2: Include the following measures as part of the construction specifications (GP Policy 4-P-16):</p> <ul style="list-style-type: none"> a) Maintain construction equipment engines in good condition and in proper tune per manufacturer's specification for the duration of construction; b) Use alternative fuel construction equipment if available (i.e., compressed natural gas, liquid petroleum gas); c) Require that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NOx and PM through the use of add-on control devices such as diesel oxidation catalysts or particulate filters; and d) Require all contractors use equipment that meets CARB's most recent certification standard for off-road heavy duty diesel engines. 	Applicable. MM AIR-2 is incorporated as a project condition of approval.
<p>AIR-3: Require that construction activities implement the following measures at the project sites to reduce construction equipment exhaust when building construction activities occur within 200 feet of any residential use. The contractor shall develop and the City shall approve a plan demonstrating that the off- road equipment (more than 50 horsepower and on site for more than 2 consecutive workdays) to be used in project construction (i.e., owned, leased, and subcontractor vehicles) would achieve an additional 60 percent reduction in exhaust particulate matter emissions, compared to similar equipment based on CARB statewide average emissions. Based on the CalEEMod modeling, a feasible method to achieve this objective would be the following:</p> <ul style="list-style-type: none"> a) All diesel-powered construction equipment more than 50 horsepower used on-site during all construction phases for more than two days consecutively shall meet or exceed U.S. EPA Tier 2 standards for particulate matter emissions or substituted with alternatively fueled equipment (e.g., LPG fuel). b) Prohibit use of diesel-powered generators for more than two days when line power is available. c) All non-mobile construction equipment shall be alternatively fueled or meet U.S. EPA Tier 2 standards for particulate matter emissions 	Applicable. MM AIR-3 is incorporated as a project condition of approval.
<p>AIR-4: Provide reimbursement to the City for the design and construction of the Primary Influent Pump Station mechanical odor control unit. The odor control unit shall meet current design criteria and be equivalent to the units installed at recent pump station upgrades within the City.</p>	Not applicable. MM AIR-4 applies to the Riverfront Final Map and is already complete.
<p>BIO-1: To mitigate for the impacts to 0.24 acres of seasonal wetland habitat, the developer shall consult with agencies to identify feasibility of creating onsite mitigation areas through remediation within the Riverfront park area. If onsite mitigation is determined to be infeasible then, credits shall be purchased from an approved mitigation bank at a ratio of one acre for every one acre impacted, or as otherwise directed by the regulatory agencies. Due to general low-quality of the existing wetland habitat (e.g. presence of non- native species, disturbed soils) within the project site, a mitigation ratio of one acre mitigated for each acre impacted is recommended by the biologist. Prior to issuance of grading permit, proof of purchase of mitigation bank credit or verification of onsite wetland remediation to offset losses shall be submitted to the City and U.S. Army Corps</p>	Not applicable. MM BIO-1 applies to the Riverfront Final Map and is already complete.

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<p>of Engineers.</p> <p>According to information provided by the project biologist, the Burdell wetland mitigation bank, located just south of Petaluma, has mitigation bank credits available.</p>	
<p>BIO-2: Develop final Riverfront Park design that avoids and protects wetlands. The design shall also investigate the feasibility of creating wetland habitat as part of the proposed Riverfront Park, which could serve to offset losses in lieu of purchasing credits (See BIO-1). Implement standard best management practices (BMP) to protect wetland areas during and after construction of the Riverfront Park to include, but not be limited to installation of protective staking and silt fencing to prevent inadvertent intrusion by equipment during construction.</p>	<p>Not applicable. MM BIO-2 applies to the Riverfront Final Map and is already complete.</p>
<p>BIO-3: Conduct vegetation removal within areas to be developed between September 1 and January 30, outside of the general breeding bird season. If this is completed, no further mitigation is required. Otherwise, if vegetation removal or modification occurs between February 1 and June 15, require pre- construction nesting surveys within 14 days prior to such activities to determine the presence and location of nesting bird species. If vegetation removal or modification occurs between June 16 and August 31, pre-construction surveys shall be performed within 30 days prior to such activities. If active nests are present, establish temporary protective breeding season buffers to avoid direct or indirect mortality of these birds, nests or young. The appropriate buffer distance is dependent on the species, surrounding vegetation and topography and shall be determined by a qualified biologist as appropriate to prevent nest abandonment and direct mortality during construction.</p>	<p>Not applicable. MM BIO-3 applies to the Riverfront Final Map and is already complete.</p>
<p>CULT-1: If during the course of ground disturbing activities, including, but not limited to excavation, grading and construction, a potentially significant prehistoric or historic resource is encountered, all work within a 100 foot radius of the find shall be suspended for a time deemed sufficient for a qualified and city- approved cultural resource specialist to adequately evaluate and determine significance of the discovered resource and provide treatment recommendations. Should a significant archeological resource be identified a qualified archaeologist shall prepare a resource mitigation plan and monitoring program to be carried out during all construction activities.</p>	<p>Applicable. MM CULT-1 is incorporated as a project condition of approval.</p>
<p>CULT-2: In the event that human remains are discovered, all work shall be suspended and the Sonoma County Coroner shall be contacted in accordance with provisions of the California Public Resources Code section 5097.98-99 and the Native American Heritage Commission shall be notified in accordance with the provisions of Public Resources Code 5097, so that the "Most Likely Descendant" can be designated.</p>	<p>Applicable. MM CULT-2 is incorporated as a project condition of approval.</p>
<p>GEO-1: Require implementation of all recommendations as set forth in the geotechnical investigations and updates prepared for the subject property by Miller Pacific Engineering Group (dated March 2006, July 2009, August 2011, January 2013, December 2013), including but not limited to recommendations for site and soil preparation, foundation designs, drainage and installation of utilities. Buildings shall require the following: a) structural foundation systems, such as mat slabs or rigid interconnected grade beams, able to resist the anticipated strong ground shaking and potential for differential movement caused by liquefaction and/or</p>	<p>Applicable. MM GEO-1 is incorporated as a project condition of approval.</p>

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consolidation of the bay mud, b) soil improvement, c) deep foundation systems, or d) other engineering techniques as recommended in additional geotechnical investigations of liquefaction hazards. All structures shall meet the California Building Code regulations and design requirements for seismic safety.	
GEO-2: Implement the recommendations of the project geotechnical investigations and updates prepared for the subject property by Miller Pacific Engineering Group (dated March 2006, July 2009, August 2011, January 2013, December 2013), except as modified based on site-specific refinements. Settlement mitigation measures shall include use of structural foundation systems (such as mat slabs or rigid interconnected grade beams) for residential structures, which can withstand the potential total and differential settlements in accordance with recommendations of the geotechnical investigations and deep foundations (driven piles or drilled piers) for heavier structures planned in the northern portion of the site. Ground improvement, such as with the use of Rammed Aggregate Piers (RAP), may also be appropriate at certain locations within the site.	Applicable. MM GEO-2 is incorporated as a project condition of approval.
GEO-3: Prior to the issuance of grading permits and in accordance with City of Petaluma Improvement Plan submittal requirements and procedures, the developer shall submit construction plans along with Design Level Geotechnical analysis that specifically addresses the thicker fills up to ten feet in the area near the Future Caulfield Lane Bridge in the southern portion of the site. The Improvement Plans and design level geotechnical analysis shall be subject to third party peer review in order to verify that recommended measures to address differential settlement of bay mud associated with thicker fills up to ten feet near the Future Caulfield Lane Bridge are adequate to accommodate potential settlement. In event that peer review concludes that the recommended design measures will not sufficiently minimize the effects of differential settlement, the developer shall be required to implement one of the following standard construction techniques: 1) the use of lightweight fill material in place of heavier, existing soils on areas that require thicker fill, or 2) pre-load areas that require thicker fill and allow settlement to occur prior to construction. The developer shall be responsible for the cost of the peer review and the City's Public Works Department shall coordinate the scope of service and approve findings of the peer review prior to the issuance of grading permits.	Not applicable. MM GEO-3 applies to the Riverfront Final Map and is already complete.
HAZMAT-1: Require that the quality of the stockpiled soils be reaffirmed / tested prior to use for onsite fill, which shall be done following the Clean Imported Fill Material Information Advisory prepared by the DTSC (DTSC 2001) in accordance with the recommendation set forth in the 2013 Iris Environmental Phase I Environmental Site Assessment.	Applicable. MM HAZMAT-1 is incorporated as a project condition of approval.
HAZMAT-2: Prepare and implement a Risk Management Plan (RMP) that provides the procedures to properly manage site groundwater that may be encountered during construction activities. The plan shall address procedures for discovery of any unknown features or environmental conditions that may be encountered during activities that will disturb site soils. The RMP shall include, but not be limited to the following components as set forth in the 2013 Phase I Environmental Site Assessment report: a) Soil management: Provide guidelines for identification and analysis of unknown environmental	Applicable. MM HAZMAT-2 is incorporated as a project condition of approval.

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<p>conditions and define responsibilities for management of discovery of unknown features or site conditions.</p> <p>b) Groundwater management: Prohibit use of groundwater encountered during construction activities for dust control and allow discharge of groundwater to surface waters only pursuant to a permit issued from applicable regulatory agencies. All permit conditions must be satisfied prior to discharge.</p> <p>c) Preparation and implementation of a site-specific Environmental Health and Safety Plan by the general contractor to ensure that appropriate worker health and safety measures are in place during redevelopment activities. Elements of the plan must include all practices and procedures necessary to comply with all new and existing Federal, California, and local statutes, ordinances, or regulations regarding health and safety. Specific components of the EHASP must include the following: identification of site hazards; assignment of specific health and safety responsibilities for site work; establishment of appropriate general work practices; establishment of control zones and decontamination procedures; job hazard analysis / hazard mitigation procedures; air monitoring; required personal protective and related safety equipment; and contingency and emergency information.</p>	
<p>HYDRO-1: Prepare final drainage plan as part of the Subdivision Improvement Plans that provide calculations and documentation that the site storm drain system and discharge culverts have adequate capacity to serve the project and watershed area at full buildout. The storm drain system design shall be reviewed and approved by the Sonoma County Water Agency.</p>	<p>Not applicable. MM HYDRO-1 applies to the Riverfront Final Map and is already complete.</p>
<p>HYDRO-2: In accordance with National Pollution Discharge Elimination System (NPDES) regulations, the developer shall prepare a Storm Water Pollution Prevention Plan (SWPPP) for grading and construction of subdivision improvements. The SWPPP shall also include provisions for the offsite Riverfront Park. All subsequent development phases over one acre in size shall prepare and implement a SWPPP. The SWPPP shall address erosion and sedimentation controls during all phases of construction, storage and use of fuels, and use and clean-up of fuels and hazardous materials. The SWPPP shall prohibit fueling, cleaning, or maintenance of equipment except in designated areas located as far from the river as possible. As a precaution, require contractor to maintain adequate materials onsite for containment and clean-up of any spills. The developer shall provide approval documentation from the RWQCB to the City verifying compliance with NPDES requirements. Acceptable proof of compliance is the Notice of Intent with a WDID number or other equivalent documentation.</p>	<p>Applicable. MM HYDRO-2 is incorporated as a project condition of approval.</p>
<p>HYDRO-3: The applicant shall prepare and implement an erosion control plan for the subdivision grading and each subsequent development phase site plan. The plan shall be reviewed and approved by the City of Petaluma prior to issuance of a grading permit for the proposed development. The erosion control plan shall include phasing of grading, limiting areas of disturbance, designation of restricted-entry zones, diversion of runoff away from disturbed areas, protective measures for sensitive areas, outlet protection and provision for revegetation or mulching. The plan shall also prescribe treatment measures to trap sediment, such as inlet protection, straw</p>	<p>Applicable. MM HYDRO-3 is incorporated as a project condition of approval.</p>

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bale barriers, straw mulching, straw wattles, silt fencing, check dams, terracing, and siltation or sediment ponds. Catchment and settlement ponds will be constructed to contain silt being deposited at temporary outlets. Temporary outlets will be rocked with silt control. Fiber rolls, silt fences and fiber mats will be installed on all slopes.	
HYDRO-4: The applicant shall prepare and implement an erosion control plan for construction of the trail and improvements for the offsite Riverfront Park, including, but not limited to: installing hay bales or appropriate temporary silt fencing adjacent to the perimeter of the work area to prevent inadvertent transport of sediments into the Petaluma River; limiting ground disturbance and vegetation removal during construction; conducting work prior to the rainy season; protecting disturbed areas during the rainy season; and immediately revegetating disturbed areas.	Not applicable. MM HYDRO-4 applies to the Riverfront Final Map and is already complete.
HYDRO-5: Subsequent development phases over one acre in size shall submit plans and detailed calculations to show that requirements for post- construction runoff treatment have been met in accordance with the City's stormwater management regulations.	Applicable. MM HYDRO-5 is incorporated as a project condition of approval.
NOISE-1: Pursuant to General Plan Policy 10-P-3C and the CPSP EIR Mitigation Measure 10-1, a detailed acoustical report shall be prepared by a qualified acoustical specialist as part of design phase to determine the noise control treatments for the residential buildings, offices and the hotel to meet local and state standards. Noise attenuation measures shall include as appropriate thicker walls, stucco siding, sound insulating windows and/or doors, building and bedroom orientation, and other measures pursuant to the detailed acoustical report. To achieve the noise reduction requirements, some form of forced air mechanical ventilation, satisfactory to the local building official, would be required in all residential units and the hotel. Special sound rated building elements such as windows and doors may also be necessary to reduce the intrusiveness of the train noise given that typical noise levels could reach 95 dBA Lmax outside the nearest townhomes if Quiet Zone status is not approved.	Applicable. An acoustical report was prepared for the project and findings/recommendations are incorporated in the addendum.
NOISE-2: In accordance with Mitigation Measure 10-2 of the Central Petaluma Specific Plan, require implementation of the following measures during all phases of project construction: <ul style="list-style-type: none"> a) Construction Scheduling. Limit noise-generating constructions activities to daytime, weekday hours (7 AM to 6 PM) and 9 AM to 5 PM on weekends and holidays. When construction is occurring within 100 feet of existing residences then construction shall be initiated no earlier than 8 AM during weekdays, 9 AM on Saturday and shall be prohibited on Sundays and Holidays. b) Equipment. Properly muffle and maintain all construction equipment powered by internal combustion engines. c) Idling Prohibitions. Prohibit unnecessary idling of internal combustion engines. d) Equipment Locations and Shielding. Locate all stationary noise-generally equipment, such as air compressors as far as practical from existing nearby noise sensitive receptors. 	Applicable. MM NOISE-2 is incorporated as a project condition of approval.

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<ul style="list-style-type: none"> e) Quiet Equipment Selection. Select quiet construction equipment, particularly air compressors, whenever possible. f) Noise Disturbance Coordinator. Designate a project construction supervisor as "Noise Disturbance Coordinator" who would be responsible for responding to any local complaints about construction noise. The Disturbance Coordinator would determine the cause of the noise complaint and institute reasonable measures to correct the problem. Conspicuously post a telephone number for the Disturbance Coordinator at the construction site and submit to the City of Petaluma Building and Police Departments. g) Notification. Notify nearby residents (within 300 feet) in writing of the construction schedule. 	
<p>TRAF-1: If SMART rail service (and the supplemental safety measures that may be needed for it) is delayed to such an extent that the Riverfront project is built first, require installation of the supplemental safety measures at the existing Caulfield Lane at-grade crossing to include an additional exit gate on the southwest side of the crossing to preclude vehicles from navigating around the entry gates to proceed eastbound on Caulfield. The exit gate and related items shall be installed by SMART's contractor and funded by the City. The applicant shall contribute funds equal to half the cost of construction.</p>	<p>Not applicable. MM TRAF-1 applies to the Riverfront Final Map and is already complete.</p>
<p>CUM-1. Require payment of the project's 21% pro-rata share of the cost of signalization at Hopper Street/Caulfield Lane in the future when an extension of Caulfield Lane over the Petaluma River is completed.</p>	<p>Not applicable. MM CUM-1 applies to the Riverfront Final Map and is already complete.</p>
<p>CUM-2. The Applicant shall lengthen the westbound left turn pocket at Lakeville Street/Caulfield Lane to approximately 250 feet, and install a raised median on the westbound approach to physically prohibit illegal left turn movements into and out of adjacent properties, as recommended in the project traffic report, in order to improve capacity and safety at the intersection.</p>	<p>Not applicable. MM CUM-2 applies to the Riverfront Final Map and is already complete.</p>