

8.0 MITIGATION MEASURES

Table 8.0-1 Mitigation Monitoring Program

	Environmental Issue/Action	Mitigation Measure
Air Quality		
AIR 1	To minimize NO _x emissions in construction areas.	<p>Extend timeline for construction, thereby utilizing less equipment on a daily basis</p> <p>Utilize newer construction equipment that meet tier emissions standards</p> <p>Use of alternative fuel such as biodiesel, liquid natural gas, and propane</p> <p>Adjust engine timing to reduce NO_x emissions</p>
Biological Resources		
BIO 1	If the Venice Beach/Dockweiler Beach alignment is selected and construction is to be aboveground, or if tunneling is used and the jacking and/or receiving pit is within 500 feet of the nesting site, and any construction activities are to occur during the least tern nesting season (April 1 through August 31)	A biological monitor with experience observing and documenting disturbance to least terns shall be present during all construction activities within 500 feet of the nesting site to ensure that construction activities do not adversely affect least terns using the nesting site. In addition, the monitors will ensure that work crews properly dispose of all garbage in covered containers.
BIO 2	If any tunneling activities are to occur during the least tern nesting season (April 1 through August 31)	A water quality specialist or biological monitor shall conduct surveys at tunneling locations a minimum of once daily to ensure that tunneling does not increase water turbidity.
	If any turbidity from the tunneling activities is discovered in least tern foraging areas	The tunneling activities shall cease until the leak from the tunnel that is resulting in turbidity is repaired or managed.
BIO 3	Existing and potential values in environmentally sensitive habitat areas shall be protected, enhanced, and where feasible, restored. If any habitat is disturbed	Based on the City of Venice LUP and LCP, restore to ESHAs to previous undisturbed condition.
	Marine resources shall be maintained, enhanced, and where feasible, restored. If any marine resources are disturbed	Based on the City of Venice LUP and LCP, restore to previous undisturbed condition.
Circulation, Traffic and Parking		
TRA 1	To coordinate with the city to ensure adequate traffic signals and controls are in place prior to and during times of construction	For each construction site, a construction traffic management plan shall be prepared and submitted to the City for review and approval prior to the start of any construction work.
TRA 2	To adequately control traffic to ensure compliance with all local and state safety standards and specifications	<p>A site-specific construction worksite traffic control plan shall be prepared for each construction site and submitted to the City for review and approval prior to the start of any construction work. This plan shall include such elements as the location of any lane closures, restricted hours during which lane closures would not be allowed, local traffic detours, protective devices and traffic controls (such as barricades, cones, flagmen, lights, warning beacons, temporary traffic signals, warning signs), access to abutting properties, and provisions to maintain emergency access through construction work areas.</p> <p>Coordinate with emergency service providers (police, fire, ambulance and paramedic services) to provide advance notice of any lane closures, construction hours and changes to local access and to identify alternative routes where appropriate.</p>
TRA 3	To reduce traffic congestion	Fully utilize available street space to minimize lane reductions on affected streets, including elimination of on-street parking where necessary. Implement left-turn restrictions as appropriate on re-stripped street segments to facilitate the movement of through traffic. Only eliminate travel lanes when absolutely necessary.
TRA 4	To protect pedestrian and recreational traffic	Provide signage indicating alternative pedestrian and bicycle access routes where existing facilities would be affected.
TRA 5	To ensure ingress/egress to all properties adjacent to the project and surrounding areas	Provide advance notice to any affected residents, businesses and property owners in the vicinity of each construction site and, where existing property access will be reduced, identify alternative means of access.
TRA 6	To avoid impacts to public transportation	Coordinate with public transit providers (MTA, LADOT Commuter Express, Culver City Bus) to provide advance notice of any lane closures, construction hours and, where necessary, to identify sites for temporary bus stops within a reasonable walking distance of any displaced bus stops.

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Cultural Resources		
CR 1	To avoid impacts to areas where cultural resources are known to exist	A qualified cultural monitor shall be on site in areas of known cultural finds where grading is to occur.
CR 2		When avoidance cannot be achieved, alternate measures such as surface collection and/or subsurface data recovery of significant sites must be implemented;
CR 3	In the event of the discovery and subsequent recovery of fossil remains	A qualified monitor should halt construction temporarily while remains are analyzed prior to resuming construction.
CR 4	At CA-LAN –66 location	Monitor all construction in the vicinity of the CA-LAN-66 site located in Vista Del Mar by an Archaeologist qualified to recognize and assess both prehistoric and historical resources
CR 5	If new discovery is encountered	Develop a contingency plan for addressing unanticipated new discoveries of cultural resources in the project area, evaluate and report any findings
CR 6	If significant cultural resources are found during construction	Those significant cultural resources found shall be recovered from the project site, curated by an archaeologist recommended by the city and offered to an area museum whose collection is available for the viewing by the public
PAL 1	The discovery of paleontologic resources may be present in specific project areas where grading and other excavation activities are to occur	Prior to construction, the services of a qualified vertebrate paleontologist approved by the City of Los Angeles and LACMVP will be retained to implement the mitigation program during earth-moving activities at the project site.
PAL 2		The paleontologist will develop a formal agreement with a recognized museum repository, such as the LACMVP or LACMIP, regarding the final disposition and permanent storage and maintenance of any fossil remains and the archiving of associated specimen data and corresponding geologic and geographic site data that might be recovered as a result of the mitigation program, and the level of treatment (preparation, identification, curation, cataloguing) of the remains that would be required before the entire mitigation program fossil collection would be accepted by the repository for storage.
PAL 3		The paleontologist or monitor will coordinate with the appropriate construction contractor personnel to provide information regarding lead agency requirements for the protection of paleontologic resources. Contractor personnel also will be briefed on procedures to be followed in the event that a fossil site or remains are encountered by earth-moving activities, particularly when the monitor is not on site. The briefing will be presented to new contractor personnel as necessary. Names and telephone numbers of the monitor and other appropriate mitigation program personnel will be provided to the appropriate contractor personnel.
PAL 4		Earth-moving activities will be monitored by the monitor only in those areas of the project site where these activities will disturb previously undisturbed strata. Monitoring will be conducted on a full-time basis in areas underlain by the Palos Verdes Sand and, once the activities have reached a depth 5 feet below grade, on a full-time basis in areas underlain by the coastal deposits and on a half-time basis in areas underlain by the dune sand. If fossil remains are encountered by these activities, monitoring will be increased to full time, if appropriate, at least in the vicinity of the fossil site where the area is underlain by the fossil-bearing rock unit. If no fossil remains are found once 50 percent of earth-moving activities have been completed in an area underlain by a particular rock unit, with City of Los Angeles approval, monitoring can be reduced or suspended in that area.
PAL 5		All fossil specimens recovered from the project site as a result of the mitigation program, including those recovered as the result of processing fossiliferous rock samples, will be treated (prepared, identified, curated, catalogued) in accordance with designated museum repository requirements. Small rock samples from the Palos Verdes Sand, dune sand, and coastal deposits will be submitted to commercial laboratories for microfossil, pollen, or radiometric (carbon-14) dating analysis.
PAL 6		Monitoring will consist of visually inspecting debris piles and freshly exposed strata for larger fossil remains, and periodically dry test screening sediment, rock, and debris for smaller fossil remains. As soon as practicable, the monitor will recover all vertebrate fossil specimens, a representative sample of invertebrate or plant fossils, or any fossiliferous rock sample that can be recovered easily. If recovery of a large or unusually productive fossil occurrence is warranted, earth-moving activities will be diverted temporarily around the fossil site and a recovery crew will be mobilized as necessary to remove the occurrence as quickly as possible. If not on site when a fossil occurrence is uncovered by these activities, the activities will be diverted temporarily around the fossil site and the monitor called to the site to evaluate and, if warranted, recover the occurrence. If the fossil site is determined too unproductive or the fossil remains not worthy of recovery, no further action will be taken to preserve the fossil site or remains, and earth-moving activities will be allowed to commence.
Geology/Soils/Seismicity		
GEO 1	Project improvements would be subject to earthquake ground shaking	The components of the proposed project will be designed and constructed to the seismic design requirements for ground shaking specified in the UBC for Seismic Zone 4 at a minimum.
GEO 2	Liquefaction and differential seismic settlement may occur on the project	Design and construction of the proposed project will include mitigation measures, such as flexible connections that can accommodate differential settlement, compaction grouting to densify the soils, or structural anchors to secure the pipeline.
GEO 3	Subsidence may occur to the project area	Design and construction of the proposed project will include mitigation measures, such as a watertight excavation support system to minimize groundwater pumping or construction the pipeline in a "wet" excavation.

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GEO 4	Methane gas may be detected along the project alignments	Design and construction of the proposed project will include active or passive mitigation systems for methane gas hazards, if necessary.
GEO 5	Tsunami could strike the project area	To mitigate erosion of surficial soils covering the proposed pipeline in the event of a tsunami, proper design and construction of the project components could include erosion control measures or choosing an alternate alignment off of the beach.
Hazardous Waste and Materials		
HAZ 1	Well abandonment may occur in the marina channel areas and in various alignment areas	For any wells that may need to be re-abandoned, well abandonment should be done in accordance with applicable regulations; other subsurface structures may be encountered during development work. The soils may contain methane or other gases from previous oil well field development. Site chemicals must be handled and disposed in accordance with applicable regulations. Hazardous materials would be used and waste generated during the construction and operation of the project.
HAZ 2	Employees may be exposed to hazardous materials during construction	Exposure of construction workers to contaminated materials can be minimized by implementing the measures required by federal, state, and local laws and regulations. As such, potential impacts associated with the excavation of contaminated materials would be less than significant.
HAZ 3	Storage of hazardous materials will occur on the project sites	As required in SWPPP and project specifications.
HAZ 4	Methane gas may be located in alignment areas where tunneling activity is to occur along the project alignment	A surface sweep is a method for measuring combustible vapors which may be emitted from the ground surface. When conducting the surface sweep, more attention can be taken in areas where underground gas would tend to exit the surface, such as at cracks in the ground.
HAZ 5	To ensure public safety where methane may be present along the project alignments	The City of Los Angeles Building Code requires that methane mitigation be implemented when construction occurs at these sites to ensure public safety. These measures include the installation of membrane barriers and vent piping as well as trench dams and electrical seal-offs for each of these properties.
Hydrology		
HYDRO/ WQ 1	Runoff may occur from the project site during construction activities	A SWPPP shall be submitted for review and approval. The SWPPP shall recommend interim and permanent improvements to existing drainage features to prevent uncontrolled runoff during construction and to accommodate any temporary increase in runoff associated with construction activities. Compliance with the SWPPP shall be demonstrated by obtaining a NPDES construction permit for all construction activities including clearing, grading, or excavation that result in the disturbance of at least 1-acre of total land area or activity which is part of a larger common plan of development of 1 acre or greater. Copies of said NPDES permit(s) and related SWPPP shall be available for inspection at the City and at the construction site prior to land disturbing activity. Total disturbance area includes the staging and material storage areas. Although this project may not total over one acre of actual disturbance area, because of the highly sensitive habitat areas within the project, a SWPPP should be a required mitigation element.
HYDRO/ WQ 2	Dewatering discharge is expected to occur during the initial phase of pit construction,	Hydraulic isolation of the pits can be accomplished by the contractor by various methods of his choice, including interlocking sheet pile walls, soil cement walls constructed with Deep Mixing Methods, or slurry diaphragm walls. Water removed from the pits will be discharged to the storm drain system after proper treatment in accordance with local regulations Solid particles will be removed by using sedimentation tanks and filtration. If petroleum contamination is encountered, free product, if any, will be skimmed off the surface and oil/water separators will be used to remove the remaining contamination. Granular activated carbon could be used to remove any dissolved organic or other contaminants. Alternatively, discharged water will be shipped to authorized vendors for treatment and disposal.
Noise and Vibration		
NOI 1	Construction noise levels that exceed city and county standards may be created during project construction activities.	All construction activities shall be limited to the hours of 7:00 a.m. to 9:00 p.m. Monday through Friday, and 8:00 a.m. to 6:00 p.m. on Saturday. No construction or construction-related activities shall take place on any Sunday or national holiday.
NOI 2		Heavy trucks engaged in the removal of muck from tunneling operations off site via heavy trucks shall be limited to major arterial streets and away from residential roadways, to the extent practicable.
NOI 3		All noise-producing project equipment and vehicles using internal combustion engines shall be equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specification. Mobile or fixed "package" equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and noise control features that are readily available for such type of equipment.
NOI 4		All mobile or fixed noise-producing equipment used on the project, and that is regulated for noise output by a local, state, or federal agency, shall comply with such regulation while in the course of project activity.
NOI 5		The erection of temporary soundwall barriers shall be considered where project activity is unavoidably close to noise-sensitive receptors.
NOI 6		Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment where feasible.
NOI 7		Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.

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NOI 8		Construction site and haul-road speed limits shall be established and enforced during the construction period.
NOI 9		The use of noise-producing signals, including horns, whistles, alarms, and bells shall be for safety warning purposes only.
NOI 10		No project-related public address or music system shall be audible at any adjacent receptor.
NOI 11		The on-site construction supervisor shall have the responsibility and authority to receive and resolve noise complaints. A clear appeal process to the owner shall be established prior to construction commencement that will allow for resolution of noise problems that cannot be immediately solved by the site supervisor.
NOI 12		The contractor shall develop a project noise control plan, which shall have been approved by the owner or designated noise control professional and implemented prior to commencement of any construction activity.
VIB 1		Vibration may occur in the project area during construction activities
VIB 2	Any physical, chemical or biological method, or any combination of such methods, used to increase the bearing capacity or decrease the permeability of soils under the foundation of existing buildings.	
VIB 3	A specialized form of grouting used to compensate for movements and settlements caused by tunneling adjacent to or beneath existing buildings.	
Recreational Resources and Facilities		
REC 1	Construction-related activities may impact areas and facilities used by the public for sporting events and recreational activities	Provide advanced notice to the public, businesses, sports/ recreation groups and property owners indicating time and duration of non-use or partial use of facilities/areas to be impacted by construction.
Visual/Aesthetics		
AES 1	Where impacts may not be directly mitigated, they may be offset by actions taken elsewhere to compensate for the loss of visual quality. It would be speculative to definitively list specific offsetting actions at this time.	The city shall consider landscaping public areas within affected neighborhoods where open space is currently degraded and unsightly. The city shall consider screening from public view existing features, which are incongruous with the character of their surroundings (such as the VPP). The city shall consider creating public access to currently unavailable scenic vistas (new beach access routes, paths, bikeways, public parking).