

APPENDIX Q

Mitigation Monitoring and Reporting Program

**MITIGATION MONITORING AND REPORTING PROGRAM
FOR
THE BUENA VISTA LAGOON ENHANCEMENT PROJECT
FINAL ENVIRONMENTAL IMPACT REPORT
State Clearinghouse No. 201304179**

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MITIGATION MONITORING AND REPORTING PROGRAM BUENA VISTA LAGOON ENHANCEMENT PROJECT

Mitigation measures have been identified in the Final Environmental Impact Report (EIR) for the Buena Vista Lagoon Enhancement Project to reduce or avoid potential environmental impacts. To ensure compliance, the following mitigation monitoring and reporting program (MMRP) has been formulated. This program provides a checklist of the entity responsible for the mitigation, when the mitigation will occur, and the measure to document compliance. Project design features are also incorporated into the mitigation monitoring and reporting program because they have been committed to by the San Diego Association of Governments (SANDAG) proactively to avoid or minimize impacts, support the overall enhancement objectives of the project, or are regulatory requirements with which the project would need to comply.

Table 1 summarizes the mitigation measures for the Saltwater Alternative, selected as the proposed project by the SANDAG Board of Directors. The EIR originally considered all project alternatives at an equal level of detail and some mitigation was only applicable to alternatives not selected as the project; those measures are not included in this table. Information contained within the checklist clearly identifies the mitigation measure, delineates the monitoring schedule, and defines the conditions required to verify compliance. The following list is an explanation of the five columns that constitute the checklist.

- Column 1** **Mitigation Measure:** Each measure is numbered and provides the mitigation action necessary to reduce an impact to a below a level of significance.
- Column 2** **Monitor:** Identifies the entity or public agency that is responsible for determining compliance with the mitigation measure and for informing SANDAG about compliance.
- Column 3** **Schedule:** The monitoring schedule depends upon the progression of the overall project. Therefore, specific dates are not used within the "Schedule" column. Instead, scheduling describes a logical succession of events (e.g., prior to construction, annual) and, if necessary, delineates a follow-up program.
- Column 4** **Compliance Activities:** Specifies discrete actions that will satisfy the mitigation requirement.
- Column 5** **Verification of Compliance:** Verification by the responsible monitor that the mitigation measure has been completed.

Table 2 summarizes the project design features that have been incorporated to minimize and avoid, where possible, impacts to resources. Some project design features are incorporated to avoid or minimize a potential significant impact proactively through design, but others are additional measures that support the overall enhancement objectives of the project without being tied to a specific potential impact. Many features also represent regulatory or code requirements that the project would need to comply with to be approved by various agencies and/or implemented legally. The table includes the purpose, timing, and responsibility for implementation of each project design feature. They are provided within this MMRP to ensure inclusion within the appropriate future construction documents to confirm implementation.

**Table 1
Mitigation Measures**

Mitigation Measure	Monitor	Schedule	Compliance Action	Verification of Compliance (Date/Notes)
Mitigation Measure Land Use-1: The project proponent will construct a pedestrian bridge that spans the proposed tidal inlet at a height above the calculated high tidal and flood flows to provide north-south lateral access for beach users. Bridge construction will occur prior to opening the tidal inlet.	Contractor	During Construction, prior to opening inlet	Construction Monitoring Report	
Mitigation Measure Recreation-1: Pipeline segments will be covered with sand at consistent intervals to facilitate pedestrian access across the pipeline.	Contractor	During Construction	Construction Monitoring Report	
Mitigation Measure Water Quality-1: Compliance with regulatory requirements intended to address turbidity impacts (e.g., Construction General Permit, Municipal Permit) shall be implemented to ensure impacts would be reduced to a less than significant level. Compliance with those permit conditions shall be monitored through the construction monitoring program and the contractor shall certify to the engineer of record that permit conditions have been completed.	Contractor	During Construction	Construction Monitoring Report	
Mitigation Measure Water Quality-2: Water levels shall be actively managed by using a temporary cofferdam, and/or dike, and/or dewatering in active work areas during weir replacement, and/or tidal inlet construction, and/or I 5 weir construction activities to minimize the impact of dredge-related turbidity. The contractor would ensure waters would be free of changes in turbidity that cause nuisance or adversely affect beneficial uses during construction activities.	Contractor	During Construction	Construction Monitoring Report	

Mitigation Measure	Monitor	Schedule	Compliance Action	Verification of Compliance (Date/Notes)
<p>Mitigation Measure Biological Resources-1: Prior to construction, a preconstruction survey shall be conducted to confirm the number of individual southwestern spiny rush plants and their locations within the construction footprint. Each plant, after mapping, shall be salvaged to avoid direct impacts and held at a nursery during the entirety of construction. Post construction, salvaged plants shall be replanted in habitats similar to pre-construction conditions.</p>	Qualified Biologist	Pre-Construction, Post-Construction	Construction Monitoring Report	
<p>Mitigation Measure Biological Resources-2: A qualified biological monitor shall flush birds by walking ahead of construction equipment prior to grading in undeveloped, terrestrial habitats suitable to support sensitive birds to help avoid mortality of bird species during construction activities.</p>	Qualified Biologist	During Construction		
<p>Mitigation Measure Biological Resources-3: Vegetation grubbing and removal shall occur outside of the bird breeding season (February 1 through September 15) to avoid potential take of nesting birds.</p>	Qualified Biologist	During Construction		
<p>Mitigation Measure Biological Resources-4: A qualified biologist shall prepare and implement a targeted predator control plan for light-footed Ridgway's rail and Belding's savannah sparrow. Activities would include fencing, public signage, selective vegetation removal (i.e., invasive species or native species not preferred by Belding's savannah sparrow), construction of nesting platforms, perch removal, predator trapping/control, and/or other techniques to minimize predation of the species during construction and the post-construction monitoring period.</p>	Qualified Biologist	During Construction, Post-Construction	Predator Control Plan	

Mitigation Measure	Monitor	Schedule	Compliance Action	Verification of Compliance (Date/Notes)
Mitigation Measure Biological Resources-5: Lights shall be downshielded to direct the light down toward the area of work and minimize spillage or glare (same as Visual-2).	Contractor	During Construction	Construction Monitoring Report	
Mitigation Measure Biological Resources-6: Construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers (same as Noise-1).	Contractor	During Construction	Construction Monitoring Report	
Mitigation Measure Biological Resources-7: Exposed engines on dredging equipment shall be housed to the greatest extent possible (same as Noise-2).	Contractor	During Construction	Construction Monitoring Report	
Mitigation Measure Cultural-1: A Monitoring and Discovery Plan shall be prepared and implemented prior to the start of ground-disturbing activities for soil and vegetation removal at the lagoon margins to provide protocols in the event archaeological material is encountered during construction of the project. If previously unknown resources are identified during construction, the lines of communication and measures outlined in the Monitoring and Discovery Plan would be followed, including applicable late discovery protocols. These measures would include: <ul style="list-style-type: none"> • Ground-disturbing construction activity would be temporarily halted by the project archaeologist and/or Native American monitor at the location of the find and redirected elsewhere until the find is assessed by a qualified archaeologist for eligibility to the CRHR. • If the find is determined by the project archaeologist to be potentially eligible for the CRHR: <ul style="list-style-type: none"> ○ on stable surfaces, an exclusionary zone would be set up around the find and marked (e.g., lath and flagging or silt fencing). ○ the cultural resources principal investigator would contact 	Qualified Archaeologist	Pre-Construction, During Construction	Monitoring and Discovery Plan	

Mitigation Measure	Monitor	Schedule	Compliance Action	Verification of Compliance (Date/Notes)
<p>SANDAG to formulate a plan for evaluation or avoidance through redesign.</p> <ul style="list-style-type: none"> ○ dredging or mechanical ground-disturbing activities would not resume in that location until the principal investigator is notified by SANDAG that activities may resume ○ If the find is discovered on state lands, California State Lands Commission (CSLC) Assistant Chief Counsel will be consulted. The final disposition of archaeological, historical, and paleontological resources recovered on state lands under the jurisdiction of the CSLC will be approved by the Commission. <p>Evaluation procedures would include:</p> <ul style="list-style-type: none"> • subsurface excavation (in stable sediments), • cataloging and laboratory analysis of recovered cultural materials, • curation of the artifact collection at an approved regional facility, and • preparation of a draft and final technical report pursuant to CEQA documenting the discovery and addressing regional research issues. 				
<p>Mitigation Measure Cultural-2: A training session for project construction personnel shall be conducted by a qualified archaeologist prior to the start of ground-disturbing activities for soil and vegetation removal at the lagoon margins. The training session shall include a review of required monitoring locations and communication protocols, types of cultural resources that might be encountered, cultural resources responsibilities, protection procedures, and avoidance measures.</p>	<p>Qualified Archaeologist</p>	<p>Pre-Construction</p>	<p>Monitoring and Discovery Plan</p>	

Mitigation Measure	Monitor	Schedule	Compliance Action	Verification of Compliance (Date/Notes)
<p>Mitigation Measure Cultural-3: Cultural resources monitoring shall be conducted during mobilization and use of land-based equipment for soil and vegetation removal along the perimeter of the lagoon. A qualified archaeological monitor and Native American representative shall be present during mechanical excavations in stable sediments with the potential for CRHR-eligible cultural resources (i.e., topsoils on stable sediments).</p>	<p>Qualified Archaeologist, Native American representative</p>	<p>During Construction</p>	<p>Monitoring and Discovery Plan</p>	
<p>Mitigation Measure Cultural-4: If human remains are encountered during construction:</p> <ul style="list-style-type: none"> • Work at that location shall be suspended and redirected elsewhere. • SANDAG shall be immediately notified of the discovery. • Remains shall be left in place and exclusionary fencing will be placed in a 50-foot radius around the discovery. • Under the provisions of California PRC Section 7050.5, the County Coroner shall be notified in the event of discovery of human remains. • If the remains are either determined to be or there is reason to believe they are Native American, the coroner shall notify the NAHC within 24 hours. • Disposition of Native American human remains on nonfederal lands is within the jurisdiction of the NAHC. SANDAG, as lead agency for the Enhancement Project, shall initiate consultation with the NAHC. As part of the consultation process, the NAHC shall notify the most likely descendent (MLD) from the remains. No ground-disturbing work shall occur in the location of the remains until consultation between the NAHC, MLD, and SANDAG has been completed, and notification by SANDAG 	<p>Qualified Archaeologist</p>	<p>During Construction</p>	<p>Monitoring and Discovery Plan</p>	

Mitigation Measure	Monitor	Schedule	Compliance Action	Verification of Compliance (Date/Notes)
<p>that construction activities may resume.</p> <ul style="list-style-type: none"> If the remains are discovered in situ, they shall be left in place and covered with weather-proof materials such as a tarp or plywood. If they are discovered in spoils, the remains shall be placed in a labeled bag and, on approval by the MLD, transported to a secure locked container. An osteologist or a forensic anthropologist shall, in consultation with the MLD, inspect fragmentary bones that are suspected to be human but cannot be identified as such in the field. 				
<p>Mitigation Measure Paleo-1: If significant paleontological resources are encountered during excavation or other ground-disturbing activities within and south of the inlet containing River and/or Marine Terrace Deposits, work in the area of the discovery shall be temporarily halted and a qualified paleontologist shall be contracted to properly assess the resource(s), and develop and implement a paleontological resource monitoring and fossil recovery program. The monitoring and recovery program may include monitoring of future ground disturbance, worker training, resource assessment and recovery, proper documentation, curation, and/or other measures as deemed appropriate.</p>	Qualified Paleontologist	During construction	Paleontological Resource Mitigation Report	
<p>Mitigation Measure Paleo-2: A final Paleontological Resource Mitigation Report that documents the results, analysis, and conclusions of all phases of the Paleontological Monitoring Program shall be prepared if excavation or other ground-disturbing activities into River and/or Marine Terrace Deposits occurs and monitoring is required.</p>	Qualified Paleontologist	During Construction	Paleontological Resource Mitigation Report	
<p>Mitigation Measure Visual-1: Temporary screening shall be placed around construction areas that are secured with a chain link</p>	Contractor	During Construction	Construction Monitoring	

Mitigation Measure	Monitor	Schedule	Compliance Action	Verification of Compliance (Date/Notes)
fence (such as staging areas) to provide visual screening of the equipment. Screening could be brown or green mesh or other similar material attached to the fencing. It would be as high as the fence itself, which would range from approximately 6 to 10 feet.			Report	
Mitigation Measure Visual-2: Lights shall be downshielded to direct the light down toward the area of work and minimize spillage or glare.	Contractor	During Construction	Construction Monitoring Report	
Mitigation Measure Traffic-1: Prepare work zone traffic control plans for lane closures and related construction along Carlsbad Boulevard prior to construction. The work zone traffic control plans shall be prepared by the contractor in accordance with the California Manual of Uniform Traffic Control Devices (CAMUTCD), Caltrans Standard Plans (2010), and current standards and best practices of the reviewing and approving agencies. These plans are intended to accommodate workers within the roadway, while facilitating continued circulation for road users (motorists, bicyclists, and pedestrians, including persons with disabilities in accordance with the ADA) through the work zone.	Contractor	Pre-Construction, During Construction	Traffic Control Plan	
Mitigation Measure Traffic-2: Provide advanced notification to motorists, bicyclists, and pedestrians along Carlsbad Boulevard that delays and traffic congestion will occur during bridge construction and retrofitting activities to encourage avoidance of the construction area. This notification may be accomplished through various measures such as information and detour routes included on the project website; traffic details included in notifications sent to local residents; traffic and alternative route information published in local media; and physical traffic control measures, such as temporary signage located at various distances from the construction area.	Contractor	Pre-Construction, During Construction	Traffic Control Plan	

Mitigation Measure	Monitor	Schedule	Compliance Action	Verification of Compliance (Date/Notes)
<p>Mitigation Measure Traffic-3: Construct the Boardwalk prior to initiation of the Carlsbad Boulevard bridge replacement. Route pedestrian traffic to the Boardwalk while the Carlsbad Boulevard bridge is under construction.</p>	Contractor	During Construction	Traffic Control Plan	
<p>Mitigation Measure Air Quality-1: Off-road construction diesel engines not registered under ARB's Statewide Portable Equipment Registration Program that have a rating of 50 horsepower (hp) or more, shall meet, at a minimum, the Tier 4 California Emissions Standards, unless such an engine is not available for a particular item of equipment. Tier 3 engines will be allowed on a case-by-case basis when the contractor has documented that no Tier 4 equipment or emissions equivalent retrofit equipment is available for a particular equipment type that must be used to complete construction. Documentation shall consist of signed written statements from at least two construction equipment rental firms.</p>	Contractor	During Construction	Construction Monitoring Report	
<p>Mitigation Measure Air Quality-2: The following measures shall be implemented by the construction contractor and enforced by an on-site monitor to meet SDAPCD Rule 55 requirements to control fugitive dust emissions:</p> <ul style="list-style-type: none"> • Exposed surfaces (e.g., unpaved access roads) shall be watered, as necessary, to control fugitive dust. • Sweepers and water trucks shall be used to control dust and debris at public street access points. • Dirt storage piles shall be stabilized by chemical binders, tarps, fencing, or other suppression measures. • Provide perimeter erosion control to prevent washout of silty material onto public roads. • Cover haul trucks or maintain at least 12 inches of freeboard to 	Contractor	During Construction	Construction Monitoring Report	

Mitigation Measure	Monitor	Schedule	Compliance Action	Verification of Compliance (Date/Notes)
<p>reduce blow-off during hauling.</p> <ul style="list-style-type: none"> Enforce a 15-mph speed limit on unpaved surfaces. 				
<p>Mitigation Measure Air Quality-3: Minimize idling time by shutting equipment off when not in use or reducing the time of idling to no more than 3 minutes (5-minute limit is required by the state airborne toxics control measure [Title 13, sections 2449(d)(3) and 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site.</p>	Contractor	During Construction	Construction Monitoring Report	
<p>Mitigation Measure Air Quality-4: Maintain construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.</p>	Contractor	During Construction	Construction Monitoring Report	
<p>Mitigation Measure Noise-1: All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers.</p>	Contractor	During Construction	Construction Monitoring Report	
<p>Mitigation Measure Noise-2: Exposed engines on dredging equipment shall be housed to the greatest extent possible.</p>	Contractor	During Construction	Construction Monitoring Report	
<p>Mitigation Measure Safety-1: During and following the construction of the new beach inlet, signs will be posted near the inlet to inform beachgoers of the dangers of inlet crossing.</p>	Contractor	During Construction, Post Construction	Construction Monitoring Report	

**Table 2
Project Design Features**

Project Design Feature ID	Design Features	Purpose	Timing	Implementation Responsibility
CARLSBAD BOULEVARD BRIDGE DESIGN FEATURES				
PDF-1	Design recommendations from the San Diego Association of Governments (SANDAG) Sea Level Rise Study (SANDAG 2013) and California Coastal Commission (CCC) Sea-Level Rise Policy Guidance (CCC 2015) will be incorporated into pile foundation and abutment protection engineering for bridgework.	Ensure bridge structural integrity.	Pre-construction	Project engineer
PDF-2	The replacement bridge structure along Carlsbad Boulevard will possess deep pile foundations and well-protected abutments as engineered per appropriate regulatory safety requirements. Structures will be designed in accordance with applicable local and state engineering and design standards.	Ensure bridge structural integrity and meet engineering requirements.	Pre-construction	Project engineer
PDF-3	The Carlsbad Boulevard alignment and bridge approach will conform to California Department of Transportation (Caltrans) standards for sight distance and vertical clearance.	Ensure motorist safety and meet engineering requirements.	Pre-construction	Project engineer

Project Design Feature ID	Design Features	Purpose	Timing	Implementation Responsibility
PDF-4	Channel and infrastructure improvements would be reviewed by SANDAG, the City of Carlsbad, and the City of Oceanside, as appropriate, prior to approval of project grading plans. Review by agencies with regulatory authority over specific structures in the lagoon (e.g., SANDAG for railroad structure protection, Caltrans for I-5 structure protection, Cities of Carlsbad and Oceanside for Carlsbad Boulevard bridge replacement and pier protection) would focus on code requirements for structural and seismic safety for infrastructure improvements, and adequacy of revetment/pier protection for structures within channels.	Engineering review.	Pre-construction	SANDAG, City of Carlsbad, City of Oceanside
PDF-5	Create a temporary bicycle path on the outside lane of the open lane along Carlsbad Boulevard during bridge construction to allow continued access between the Cities of Oceanside and Carlsbad.	Bicycle access during construction.	During bridge reconstruction	Construction contractor
MATERIAL PLACEMENT ACTIVITIES				
PDF-6	Construct longitudinal training dikes at all receiver sites.	Reduce nearshore turbidity.	During beach-building	Construction contractor
PDF-7	Sand placement to avoid blocking line-of-sight at permanent lifeguard towers.	Public safety during construction.	During beach-building activities	Construction contractor, in coordination with local lifeguards
PDF-8	Coordinate the schedule at individual materials placement sites to the extent possible to avoid major holidays and special events.	Minimize recreational conflicts.	During beach-building activities	SANDAG and construction contractor

Project Design Feature ID	Design Features	Purpose	Timing	Implementation Responsibility
PDF-9	Contain fill material during sand placement near storm drain outlets.	Continue proper drainage.	During beach-building activities	Construction contractor, in coordination with City Engineer
PDF-10	For disposal at LA-5, during transfer of the material, excess water would be decanted from the barge and returned via pipe back to the lagoon to minimize ocean turbidity.	Minimize ocean turbidity.	During material disposal	Construction contractor
LAGOON ENHANCEMENT ACTIVITIES				
PDF-11	Conduct cattail maintenance during daylight hours and outside the bird nesting season (February 1 through September 15).	Avoid impacts to breeding birds and sensitive species.	During cattail maintenance	SANDAG

