



MID-COAST CORRIDOR
TRANSIT PROJECT

Appendix E Project Measures

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APPENDIX E PROJECT MEASURES

This appendix is a compendium of all project measures presented in the *Mid-Coast Corridor Transit Project Final Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report* (SEIS/SEIR) and supporting technical reports. Project measures are incorporated as part of the project and consist of design features, best management practices (BMPs), or other measures (e.g., formation of plans to deal with hazardous materials) required by law and/or permit approvals, that avoid or minimize potential impacts. The appendix provides references to the source documents where appropriate to provide additional detail and context. Upon certification of the Final Supplemental Environmental Impact Report and adoption of the project, the San Diego Association of Governments (SANDAG) will ensure project measures are implemented during project design, planning, construction, and/or operation, as the context requires. As the project moves forward, SANDAG may authorize refinements to project measures to more appropriately address a particular issue, provided such modifications result in equal or greater effectiveness with regard to minimizing or avoiding potential impacts.

E.1 Community and Neighborhoods

- The proposed new Trolley stations would be designed to be consistent with the existing character of the surrounding communities and neighborhoods, and would support existing development.
- Design of the UCSD West Station would be completed in coordination with UCSD to visually integrate the station with the Matthews Apartments, thus minimizing potential visual impacts.

Sources: Chapter 4.0, Section 4.2.3.2 of the Final SEIS/SEIR and the *Mid-Coast Corridor Transit Project Social, Community, and Neighborhood Impacts Technical Report* (SANDAG, 2014e)

E.2 Socioeconomic and Fiscal

- Property and business owners affected by acquisitions and displacements would be compensated consistent with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, as amended, the California Relocation Assistance Act, and SANDAG Board Policy No. 021. Refer to Chapter 5.0, Section 5.4.1 of the *Mid-Coast Corridor Transit Project Property Acquisitions Impacts Technical Report* (SANDAG, 2014o) for additional information.
- SANDAG would prepare a Real Estate Acquisition Management Plan to outline procedures for purchasing property and assisting relocations to ensure fair and equitable treatment of all property owners. Refer to Chapter 5.0, Section 5.4.1 of the *Mid-Coast Corridor Transit Project Property Acquisitions Impacts Technical Report* (SANDAG, 2014o) for additional information on this plan.

Sources: Chapter 4.0, Section 4.3.3.2 of the Final SEIS/SEIR and the *Mid-Coast Corridor Transit Project Property Acquisitions Impacts Technical Report* (SANDAG, 2014o)



E.3 Visual Resources and Aesthetics

- The proposed new Trolley stations would be designed to be consistent with the existing visual character of the surrounding communities and neighborhoods, and would support existing development.
- Design of the UCSD West Station would be completed in coordination with UCSD to visually integrate the station with the Matthews Apartments, thus minimizing potential visual impacts.
- Traction Power Substations (TPSSs)
 - All TPSS enclosures located in highly urbanized and/or heavily traveled (vehicular or pedestrian) areas would be screened from public view with walls and/or vegetation. If walls are used, the material and design would be consistent with the existing visual character of the surrounding neighborhood. Additionally, TPSS enclosures would use the minimum footprint needed for operation and access.
 - All TPSS enclosures located in sensitive natural or public open space areas would also be screened from public view. Where appropriate, in sensitive natural open space areas, screening material would consist of native vegetation and would not use any non-native invasive species or noxious weeds. Screening vegetation for TPSS enclosures located near public open space areas, such as parks or public rights-of-way, and maintained by others would use ornamental plant material that is consistent with the surrounding or adjacent vegetation.
- Lighting
 - At project stations and station areas, exterior lighting would include light fixtures for pedestrian safety, security, and signage. This lighting would be directed down and would minimize light trespass or spill-over into sensitive areas, such as residential neighborhoods, hotels, or medical facilities, using shielding where appropriate. Lighting levels would not exceed 2 foot-candles or more from the project area into the adjacent residential uses or other sensitive receptors. The project lighting would be designed to illuminate specific areas of the project site and station platforms, and the low level of lighting that would be visible from off-site locations would blend with the overall ambient glow that is associated with the immediate urban environment.

Sources: Chapter 4.0, Section 4.4.3.2 of the Final SEIS/SEIR and the *Mid-Coast Corridor Transit Project Visual Impacts Technical Report* (SANDAG, 2014j)

E.4 Noise and Vibration

- If during final design the height of the retaining wall on the east side of Interstate (I-) 5 becomes greater than one-tenth the distance to the nearest receivers on the west side of I-5, a sound-absorptive finish to the wall would be incorporated into the project design to eliminate or substantially reduce traffic noise reflections.

Sources: Chapter 4.0, Section 4.7.3.2 of the Final SEIS/SEIR and the *Mid-Coast Corridor Transit Project Noise and Vibration Impacts Technical Report* (SANDAG, 2014p)



E.5 Ecosystems and Biological Resources

- During final design, the project's footprint would be further reviewed and, where possible, the footprint would be minimized to reduce impacts to wetlands and vegetation.
- Features would be added to the San Diego River Bridge to make it more “bat friendly.” Refer to Chapter 4.0, Section 4.8.4.2 of the Final SEIS/SEIR for additional information.
- The concrete-lined channel has been designed with a slight inclination toward the center of the channel. The majority of riprap placed at the upstream and downstream ends of the proposed channel would not be grouted, which would allow sediment to fill gaps, creating a more natural surface for wildlife to cross. Refer to Chapter 4.0, Section 4.8.4.2 of the Final SEIS/SEIR for additional information.

Sources: Chapter 4.0, Section 4.8.3.2 of the Final SEIS/SEIR and the *Mid-Coast Corridor Transit Project Biological Resources Technical Report* (SANDAG, 2014u)

E.6 Water Resources

- BMPs would be included as part of project design to reduce the amount of contaminants added to the 303(d) listed waters identified in Chapter 4.0, Section 4.9 of the Final SEIS/SEIR, and to eliminate potential increases in surface runoff that could otherwise impact existing downstream facilities. SANDAG would implement BMPs where site constraints, soil characteristics, and expected pollutants justify their use. Refer to Chapter 4.0, Section 4.9.3.2 of the Final SEIS/SEIR for additional information.
- The project would incorporate low impact developments (LIDs) and hydromodification approaches into site design and storm-water management to maintain the site's pre-development runoff rates and volumes. The LID measures and techniques would be selected and implemented depending on site location/size and storm-water treatment needs. Refer to Chapter 4.0, Section 4.9.3.2 for additional information.
- All proposed treatment BMPs, LIDs, and hydromodification measures would be located within the project study area and would be implemented to target project-specific constituents of concerns. Refer to Chapter 4.0, Section 4.9.3.2 for additional information.

Sources: Chapter 4.0, Section 4.9.3.2 of the Final SEIS/SEIR and the *Mid-Coast Corridor Transit Project Water Impact Analysis Technical Report* (SANDAG, 2014m)

E.7 Geotechnical and Seismic Conditions

- The design of the project would comply with design standards to avoid adverse geotechnical, geologic, and seismic impacts to people and structures. This would be reflected in applicable project plan sets and other project construction specifications.
- To prevent structural collapse, the project would incorporate design standards such as using a continuous superstructure over intermediate support locations, isolating



the superstructure from the substructure, and increasing support widths. Single-column bents are preferred over multicolumn bents to prevent differential displacements. In addition, all project structures would be designed in accordance with current seismic design standards, as found in the California Building Code (2010), the latest version of the Caltrans Seismic Design Criteria (2010b), and Caltrans Memo to Designers 20-10, “Surface Fault Rupture Displacement Hazard Investigations” (Caltrans, 2007).

- Design measures to reduce liquefaction and seismic settlement impacts include ground-improvement techniques such as in-situ densification or solidification, load transfer to underlying bearing layers (which are non-liquefiable), and over-excavation (removal and replacement with compacted engineered fill).
- The impact of lateral spreading would be reduced through design measures, such as in-situ ground-improvement methods of densification or solidification, designing the foundation to resist horizontal permanent ground displacement, or installation of subsurface barrier walls.
- The Tecolote Creek Bridge would be designed in accordance with Caltrans Memo to Designers 20-13, “Tsunami Hazard Guidelines” (Caltrans, 2010a). Primary design measures include the use of deep foundations (cast-in-drilled-hole piles) to protect from scour and tie-down anchors to alleviate buoyancy effects.
- Methods that could be used to increase slope stability include, but are not limited to, retaining walls, remedial grading, soil nails, soldier pile walls, tiebacks, and rock bolts. Mudslide impacts also could be reduced by using debris flow walls.
- Compressible soils would be addressed through the specification of in-situ densification of compressible soils, transferring the load to underlying non-compressible layers (i.e., by using pile or drilled shaft foundations), and surcharging or over-excavation (removal and replacement with compacted engineered fill) as appropriate.
- Design standards incorporated to minimize impacts from corrosive soils include the use of a low water-to-cement ratio to decrease the permeability of concrete and the use of sulfate-resistant cement. Cathodic protection can minimize the impacts of corrosive soils on steel structures.
- The risks of expansive soils would be addressed through drainage measures such as drainage-control devices to limit water infiltration near foundations, over-excavation methods to remove and replace soil with compacted engineered fill, and support of structures on piles designed to counter expansive soil impacts. BMPs to limit erosion would include hydroseeding of slopes and the use of plantings, mulch, bonded fiber matrix, geosynthetics, and fiber rolls.

Sources: Chapter 4.0, Section 4.11.3.2 of the Final SEIS/SEIR and the *Mid-Coast Corridor Transit Project Geotechnical, Geologic, and Seismic Impacts Technical Report* (SANDAG, 2014i)



E.8 Safety and Security

- A Safety and Security Certification Plan would be developed and compliance with the plan would be required.
- Safety certification by the California Public Utilities Commission would be required.
- Construction of all new tracks would occur in exclusive right-of-way without any new grade crossings, and access control features would be installed, such as fencing, along the right-of-way.
- Compliance with National Fire Protection Association (NFPA) 130 (NFPA, 2010) would be required.
- Pedestrian bridges at aerial stations would be located near or within public streets, thereby reducing the number of passengers that would cross the streets at crosswalks.
- Security features, such as closed circuit televisions and roving security forces, would be incorporated at stations.
- The principles of Crime Prevention Through Environmental Design would be incorporated in station design.
- Compliance with Transportation Security Administration regulations would be required.
- Bridges and other major structures would be designed in compliance with code requirements for seismic events.
- Exit capacity of existing sidewalks in the vicinity of new transit stations would be verified for compliance with the requirements of NFPA 130 to ensure that they would be able to accommodate the increase in pedestrian activity.

Sources: Chapter 4.0, Section 4.13.3.2 of the Final SEIS/SEIR and the *Mid-Coast Corridor Transit Project Safety and Security Impacts Technical Report* (SANDAG, 2014n)

E.9 Construction—Transit

- Impacts to Trolley operations would be minimized by single tracking, reverse running, and/or provisions for temporary crossovers from the Santa Fe Depot to the Old Town Transit Center and single-track operations at the San Diego River Bridge.
- Impacts to local bus operations would be minimized by temporarily relocating bus stops and diverting bus routes. Pedestrian access to relocated bus stops would be provided. Rerouting and relocating bus routes would be coordinated with the corresponding transit agencies and providers, including MTS, NCTD, and UCSD.
- Transit-passenger alerts would be posted at bus stops that would be temporarily closed in advance of transit service reroutes.
- Implementation of the Transportation Management Plan (TMP) and the Community Outreach Program (a component of the TMP) regarding public notice of changes in



transit services would be coordinated with transit service providers (refer to Section E.1.2 for additional information on the TMP and Sections E.2.9 and E.2.10 for additional information on the Community Outreach Program).

Sources: Chapter 3.0, Section 3.4.7.1 of the Final SEIS/SEIR, the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s), and the *Mid-Coast Corridor Transit Project Transportation Impacts and Mitigation Report* (SANDAG, 2014v)

E.10 Construction—Freeways and Roadways

- A TMP would be prepared during the design phase in consultation with the California Department of Transportation (Caltrans), the City of San Diego, UCSD, MTS, NCTD, Amtrak, emergency providers, and other appropriate agencies. Additional information on the TMP is provided in Chapter 3.0, Section 3.4.7.2 of the Final SEIS/SEIR and Chapter 6.0, Section 6.5.1.1 of the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s).
- Designated haul routes to and from construction zones and staging areas would be identified through coordination with the City of San Diego and stipulated in the TMP. Times and restrictions for truck haul operations on the routes also would be established. Additional information on designated haul routes is provided in Chapter 3.0, Section 3.4.7.2 of the Final SEIS/SEIR.
- To the extent practical, existing traffic lanes on roadways near the construction zone would be maintained in both directions, particularly during peak traffic periods.
- Short-term closures generally would be planned to occur during off-peak periods when traffic volumes are lighter. Oftentimes, these short-term closures would occur at night.
- If a roadway must be closed to vehicular traffic, alternate routes would be identified and detour signs would be used to alert motorists of the closure. To the extent practical, detour routes would avoid residential areas.
- Lane closures and prohibition of left turns and through movements at signalized intersections would be coordinated with property owners in the vicinity of such intersections; alternate routes would be identified and detour signs would be used to alert motorists of the closures.
- Where road closures require detours through other streets and intersections, traffic signal timing at these other locations would be reviewed and temporarily modified, if necessary.
- Emergency vehicle access would be maintained at all times to construction work sites, nearby businesses, schools, and residential neighborhoods. In addition, emergency vehicle access would be maintained at all times to and from fire stations, hospitals, and medical facilities near construction areas and along haul routes. Construction activities, planned roadway closures, and haul route operations would be coordinated with fire departments, hospitals, and law enforcement agencies.



Sources: Chapter 3.0, Section 3.4.7.2 of the Final SEIS/SEIR, the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s), and the *Mid-Coast Corridor Transit Project Transportation Impacts and Mitigation Report* (SANDAG, 2014v)

E.11 Construction—Pedestrians and Bicycles

- The TMP would include measures to maintain pedestrian and bicycle access through construction zones with the emphasis on safety. Measures that could be included in the TMP are provided in Chapter 3.0, Section 3.4.7.3 of the Final SEIS/SEIR.
- Portions of existing on-street bike lanes (Class II bicycle facility) and off-street bikeways (Class I bicycle facility) would be closed temporarily during the construction period. Where possible, detours would be provided. Signage would be posted to guide bicyclists to all bicycle path detour routes.
- Closure of bike lanes may require that the travel lanes in the roadway be shared between bicyclists and motorists. In such cases, advanced warning signs would be posted and speed limits on the roadways may be reduced to ensure safety.
- Ocean Beach Bicycle Path: In coordination with the City of San Diego, SANDAG would develop a traffic control plan that would specify the use of advance warning signs and pavement markings and inform bicyclists of the reduced headroom clearance during construction of the San Diego River Bridge and to dismount when passing below the falsework.
- Construction would be phased such that pedestrian access would be maintained on one side of the street whenever possible. If closures of sidewalks on both sides of a roadway at the same time cannot be avoided during construction, temporary pedestrian detours would be provided and identified in the TMP. Signage would be used to guide pedestrians to the detour routes. Proper deterrents, such as barriers or fencing, would be placed to prevent access through the construction area.
- Temporary crosswalks would be provided where they are missing at the intersection of Genesee Avenue and La Jolla Village Drive, which is located between the two pedestrian bridges that would be removed during construction. The missing crosswalks would be temporarily striped at this intersection once the pedestrian bridges are removed. The temporary crosswalks would require retiming traffic signals and installing temporary pedestrian signals where they do not exist.

Sources: Chapter 3.0, Section 3.4.7.3 of the Final SEIS/SEIR, the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s), and the *Mid-Coast Corridor Transit Project Transportation Impacts and Mitigation Report* (SANDAG, 2014v)

E.12 Construction—Parking

- La Jolla Village Square Shopping Center
 - SANDAG will work with the property owner and the contractor to develop an approach to minimize the loss of parking spaces at the shopping center at any one time while maintaining required construction access. This may include constructing



the transit parking structure in phases, if feasible, to offset parking affected during construction of the guideway and station. After the parking structure is constructed, parking spaces in the structure would be made available to shopping center patrons during later phases of construction.

- The contractor would be required to reduce the footprint of parking impacts at the La Jolla Village Square shopping center to the extent feasible during the November-to-January shopping season.
- Construction-related vehicle parking would occur at designated off-street parking locations and construction staging areas only. Refer to Chapter 3.0, Section 3.4.7.4 of the Final SEIS/SEIR and Chapter 6.0, Section 6.5.1.9 of the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s) for additional information.
- Emergency parking: measures include coordination with the City of San Diego Fire-Rescue Department and direction to contractors to provide emergency access to fire hydrants at all times.

Sources: Chapter 3.0, Section 3.4.7.4 of the Final SEIS/SEIR, the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s), and the *Mid-Coast Corridor Transit Project Transportation Impacts and Mitigation Report* (SANDAG, 2014v)

E.13 Construction—Vehicular Freight

- Measures would be similar to those described in Chapter 3.0, Section 3.4.7.2 of the Final SEIS/SEIR and in Section E.10 of this Appendix.
- During project construction, detours for truck traffic would be required; detour routes would avoid U-turns. Signage would be posted to direct freight trucks to detour routes.
- Placement of falsework would be conducted so as to not preclude trucks from using the driveways, when feasible.

Sources: Chapter 3.0, Section 3.4.7.5 of the Final SEIS/SEIR, the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s), and the *Mid-Coast Corridor Transit Project Transportation Impacts and Mitigation Report* (SANDAG, 2014v)

E.14 Construction—Community and Neighborhoods

- To the extent possible, detours would not route non-local traffic through local streets in communities and neighborhoods that are adjacent to construction zones.
- Portions of the La Jolla Eruv boundary would be relocated temporarily in cooperation with representatives from Congregation Adat Yeshurun such that the ritual enclosure around the designated area would be maintained.
- The limits of the staging area on Warren Field would be fenced to ensure that activities within the staging area would not impact the remainder of the field.



- Prior to the start of construction, a comprehensive Community Outreach Program would be developed with input from community members. Refer to Chapter 6.0, Section 6.3.1 of the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s) for additional information on the components of this program.
- The project would include fencing, natural barriers, and/or signs to preclude encroachments into the construction zones and staging areas.
- Any person or persons camped within the construction area would be notified to vacate and, if needed, removed. Persons requiring temporary shelter and/or social services would be directed to the City of San Diego Homeless Services Administrator regarding the city's Homeless Services program. SANDAG would coordinate with the city prior to construction to advise them of the need for temporary shelter and services for homeless individuals within the project construction zone. Such services may be provided by the City of San Diego or an affiliate agency.

Sources: Chapter 4.0, Section 4.17.3.2 of the Final SEIS/SEIR under the heading "Community and Neighborhoods Impacts" and the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s)

E.15 Construction—Socioeconomic and Fiscal

- SANDAG would prepare a Construction Mitigation Plan during final design of the project. This plan would address impacts to public and private property occurring during the construction period. Refer to Chapter 5.0, Section 5.4.2 of the *Mid-Coast Corridor Transit Project Property Acquisitions Impacts Technical Report* (SANDAG, 2014o) for additional information.
- To the extent possible, construction plans would minimize temporary encroachments and temporary impacts to parking spaces.
- During final design or after the Record of Decision by the Federal Transit Administration on approval of the project, each property owner affected by required temporary encroachments would be contacted to negotiate the terms and conditions for the temporary encroachment agreements.
- Prior to termination of a temporary encroachment agreement or easement, the portions of properties acquired for temporary use would be returned to the condition prior to the start of construction activities or as agreed in the temporary use agreement. Performance standards for this work would be established through coordination with the property owner and documentation of existing conditions prior to the start of construction activities.
- Property owners would be compensated for temporary encroachments and associated business impact costs. Property and business owners affected by acquisitions and displacements would be compensated consistent with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, as amended, the California Relocation Assistance Act, and SANDAG Board Policy No. 021.



- During final design, studies would be conducted to determine if unaffected portions of business parking lots may be reconfigured or re-striped to replace some or all of the parking spaces that would be unavailable during construction due to required temporary encroachments. At the end of construction activities, parking lots would be returned to their original use and there would not be a net loss in parking, except where other agreements between SANDAG and property owners have been arranged.
- Construction of the aerial guideway along the west side of I-5 and along Genesee Avenue would affect commercial signs at the La Jolla Village Square, the Shops at La Jolla Village, Costa Verde, and Westfield UTC shopping centers. In these locations, the contractor would be required to install temporary signage for businesses open during the construction period, as well as signage to direct vehicles to parking and/or access and provide pedestrian access routes.
- Construction traffic control plans would incorporate measures to avoid and minimize changes to access that may affect adjacent business districts as well as individual businesses. Access to properties (buildings, loading docks, and parking areas) generally would be maintained during operating hours of the businesses throughout the construction period. Signage would be provided to indicate businesses are open and give directions for alternate access routes. Where access is temporarily affected, coordination with property owners and businesses would be conducted well ahead of the closure.
- The Community Outreach Program would include providing notification to nearby business owners and commercial property owners of the schedule for planned construction activities, changes to traffic flow, and modification to property access. The Community Outreach Program would provide business and property owners with opportunities to voice their concerns about construction activities. When feasible, such concerns could be incorporated as specific contract requirements with which contractors would have to comply.

Sources: Chapter 4.0, Section 4.17.3.2 of the Final SEIS/SEIR under the heading “Socioeconomic and Fiscal Impacts”, the *Mid-Coast Corridor Transit Project Property Acquisitions Impacts Technical Report* (SANDAG, 2014a), and the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s)

E.16 Construction—Visual Resources and Aesthetics

- Contractors would be required to screen staging areas adjacent to residential neighborhoods and commercial districts.
- Contractors would be required to shield light at construction zones and staging areas to minimize light and glare that might affect adjacent communities and neighborhoods, particularly in residential areas and on roads.
- Contractors would be required to minimize light and glare into the night sky above the construction zone and staging areas.



- Contractors would be required to restore vegetated areas to previous conditions or as otherwise coordinated with property owners once those areas are no longer needed for construction.

Sources: Chapter 4.0, Section 4.17.3.2 of the Final SEIS/SEIR under the heading “Visual Resources and Aesthetics Impacts” and the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s)

E.17 Construction—Air Quality

- During construction, the project would be required to comply with regional rules, which would help prevent substantial short-term air pollutant emissions. The regional and state rules and regulations include the following:
 - San Diego Air Pollution Control District (SDAPCD) Rule 12—Registration of Specified Equipment: Requires specific equipment to be registered and operated using specific fuels, equipment, and operating procedures (SDAPCD, 2011)
 - SDAPCD Rule 54, Prohibition—Dust and Fumes: Requires that a person would not discharge in any one hour into the atmosphere from any source dust or fumes in excess of the amounts established under Rule 54 (SDAPCD, 2011)
 - SDAPCD Rule 361.145—Asbestos Standard for Demolition or Renovation: Requires specific measures during the demolition or renovation of asbestos-containing buildings and structures (SDAPCD, 2011)
 - California Air Resources Board’s Off-Road Diesel Vehicle Regulation: Imposes limits on idling, buying older off-road diesel vehicles, and selling vehicles; and institutes gradual requirements to clean up fleets by getting rid of older engines, using newer engines, and installing exhaust retrofits
- SANDAG would consult with SDAPCD regarding measures to minimize air pollutant emissions from construction.
- Detailed measures would be specified in the construction contract documents. The construction contractor would be required to implement these mitigation measures. The construction manager would oversee and monitor the contractor’s compliance with construction mitigation measures, rules, and regulations. These measures would include the following:
 - Minimize idle times of construction equipment and employee vehicles
 - Maintain equipment in good condition
 - Control construction dust through watering of earthwork during grading activities

Sources: Chapter 4.0, Section 4.17.3.2 of the Final SEIS/SEIR under the heading “Air Quality Impacts” and the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s)

E.18 Construction—Noise and Vibration

- All applicable noise regulations would be complied with, including the City of San Diego Noise Ordinance (City of San Diego, 2010b). This may require that the



contractor install temporary noise barriers at various locations along the rail track alignment and around station construction zones.

- Specialty equipment with enclosed engines or high-performance mufflers would be used when feasible.
- Equipment and staging areas would be located away from noise-sensitive receivers and temporary noise barriers would be installed where practicable.
- Unnecessary idling of equipment would be avoided.
- The design effort would avoid pile driving. Although pile driving is not anticipated, if it is determined that it is required, it would be limited to daytime hours.
- The TMP would be followed and construction-related truck traffic would be routed away from residential streets to the extent allowable by local regulations.
- The position of Noise Disturbance Coordinator would be established. The Noise Disturbance Coordinator would be responsible for responding to any local complaints about construction noise. The Noise Disturbance Coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and would be required to implement reasonable measures such that the complaint is resolved. Documentation of noise complaints and resolution of the complaint would be provided to SANDAG.
- Public notice would be provided to nearby residents prior to nighttime construction.
- Coordination would occur with site administrators of nearby schools and other sensitive noise receptors to discuss construction activities that generate high noise levels. Coordination between the site administrators and the construction contractor would continue on an as-needed basis throughout the construction period to address potentially disruptive noise levels.

Sources: Chapter 4.0, Section 4.17.3.2 of the Final SEIS/SEIR under the heading “Noise and Vibration Impacts” and the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s)

E.19 Construction—Ecosystems and Biological Resources

- During final design, the project’s construction footprint would be further reviewed and, where possible, the footprint would be minimized to reduce impacts to wetlands and vegetation.
- Where construction occurs adjacent to sensitive biological resources, the limits of construction would be visibly delineated through brightly colored fencing or other highly visible means. Construction crews would be directed not to encroach beyond the limits of construction.
- To reduce impacts to nocturnal species, nighttime construction activity would be minimized whenever feasible and shielded lights would be used for nighttime security lighting in the area.
- BMPs would minimize dust, erosion, and runoff generated by construction activities.



- During construction, a biological monitor would be present to assist in the avoidance of impacts to native vegetation, jurisdictional aquatic resources, special-status plants and wildlife, and nesting birds. Refer to Chapter 4.0, Section 4.17.3.2 of the Final SEIS/SEIR under the heading “Ecosystems and Biological Resources Impacts” for additional information on the duties of the biological monitor.
- During construction, a movement corridor for light-footed clapper rail would be maintained along the San Diego River main channel to allow clapper rails to move through the construction area, if present. The movement corridor would include exclusionary fencing along the project limits on both sides of the flow channel to prevent clapper rails from entering construction areas, if present.
- Indirect construction impacts to the San Diego fairy shrimp in Basin BB would be avoided through the designation of a buffer. The buffer, to be developed in consultation with the U.S. Fish and Wildlife Service and California Coastal Commission, would be established to prevent construction from indirectly affecting the pool and its associated watershed.
- To prevent the introduction of invasive plant species, construction vehicles and equipment would be washed prior to working in areas where sensitive vegetation communities are present adjacent to the project.

Sources: Chapter 4.0, Section 4.17.3.2 of the Final SEIS/SEIR under the heading “Ecosystems and Biological Resources Impacts”, the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s), and the *Mid-Coast Corridor Transit Project Biological Resources Technical Report* (SANDAG, 2014u)

E.20 Construction—Water Resources

- All construction activities would be performed consistent with the Statewide National Pollutant Discharge Elimination System (NPDES) Construction General Permit issued by the State Water Resources Control Board and the NPDES Statewide Permit (Order No. 2012-0011-DWQ, NPDES No. CAS000003) issued by Caltrans.
- All construction activities would comply with conditions included in permits issued by the U.S. Army Corps of Engineers and the San Diego Regional Water Quality Control Board under Sections 404 and 401 of the federal Clean Water Act.
- All construction activities would comply with requirements of Section 10 of the federal Rivers and Harbors Act for construction of any structure in or over any navigable water of the United States in accordance with the requirements of the U.S. Army Corps of Engineers and the U.S. Coast Guard, where applicable.
- A Storm Water Pollution Prevention Plan would be prepared for all construction and staging areas for all phases of the project.
- Temporary Erosion Control Plans would be prepared for all construction and staging areas and all phases of the project.
- A Spill Prevention, Containment, and Counter-Measure Plan would be prepared to avoid and minimize accidental contamination of water resources.



- Fencing would be used to clearly define stream and wetland buffer areas and to keep construction equipment and activities from encroaching into the buffer area.
- During design, in consultation with the applicable regulatory agencies, specific design and construction standards for stream crossings would be developed, including, but not limited to, maintaining open surface crossings (to the maximum extent possible), infrastructure setbacks, erosion-control measures, sediment-controlling excavation/fill practices, and other BMPs.
- Additional information is provided in Chapter 4.0, Section 4.17.3.2 of the Final SEIS/SEIR under the heading “Water Resources Impacts.”

Sources: Chapter 4.0, Section 4.17.3.2 of the Final SEIS/SEIR under the heading “Water Resources Impacts” and the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s)

E.21 Construction—Hazardous Materials

- A Spill Prevention, Containment, and Counter-Measure Plan would be prepared for all construction zones and staging areas to minimize potential spills of hazardous, toxic, or petroleum substances. For additional information, refer to Chapter 4.0, Section 4.17.3.2 of the Final SEIS/SEIR under the heading “Hazardous Materials Impacts” and Chapter 6.0, Section 6.8.1 of the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s).
- A site-specific Health and Safety Plan would be prepared to address potential environmental hazards that may be encountered during construction activities.
- An Air Quality Monitoring Plan would be prepared to address potential exposure hazards pertaining to airborne dust in areas of contamination. The Air Quality Monitoring Plan would be adhered to during construction and site remediation activities.
- Prior to ground-disturbing activities, samples would be gathered to evaluate potential soil and ground-water contamination at sites of concern. Stained soils and above-ground storage tanks would be disposed of safely in accordance with all applicable regulations. For additional information, refer to Chapter 4.0, Section 4.17.3.2 of the Final SEIS/SEIR under the heading “Hazardous Materials Impacts” and Chapter 6.0, Section 6.8.1 of the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s).
- If underground storage tanks not previously identified in this study or undocumented areas of contamination are encountered during project construction activities, project work would be discontinued until appropriate health and safety procedures have been implemented. The contamination remediation and removal activities would be conducted in accordance with pertinent local, state, and federal regulatory guidelines under the oversight of the appropriate regulatory agency. For additional information, refer to Chapter 6.0, Section 6.8.1 of the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s).
- Samples would be collected within the MTS and I-5 rights-of-way; soils within the I-5 right-of-way would be tested for aerially deposited lead. Within the railroad corridor,



sampling would be performed to assess the potential environmental concerns from historical railroad use. For additional information, refer to Chapter 4.0, Section 4.17.3.2 of the Final SEIS/SEIR under the heading “Hazardous Materials Impacts” and Chapter 6.0, Section 6.8.1 of the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s).

- Prior to drilling and during project excavation activities in proximity to the historic Camp Matthews rifle and pistol range, metal detectors and ground-penetrating radar would be used to locate the presence of metallic objects. If unexploded ordnance is encountered during construction, then appropriate actions would be taken by specialists to remove it in accordance with local, state, and federal regulations. Refer to Chapter 4.0, Section 4.17.3.2 of the Final SEIS/SEIR under the heading “Hazardous Materials Impacts” for additional information.
- If asbestos-cement pipes are encountered during construction, then appropriate actions would be taken by specialists to remove these pipes in accordance with local, state, and federal regulations. To ensure worker and public safety, removal and disposal of asbestos-cement pipes would follow the requirements of the Occupational Safety and Health Administration as stated in 29 Code of Federal Regulations (CFR) 1910.1001 and 29 CFR 1926.1101. Removal must also follow worker protection rules as stated in 40 CFR Part 763 Subpart G, National Emission Standards for Hazardous Air Pollution, as specified under Rule 40, CFR 61, Subpart M, and the Clean Air Act as required under United States Code 7401 et seq. Removal of asbestos cement pipe would require sealing the pipe prior to removal in order to minimize exposure.
- In areas identified as contaminated or where soil contamination is suspected and cannot be used on site, the contaminated soil would be disposed of properly at an off-site facility. Imported fill soils would be characterized to verify that they are not contaminated.
- Hazardous materials used during construction would be stored in appropriate containers on-site to avoid potential leaks and spills.
- During project construction activities, it would be necessary to excavate existing soil within the alignment area and to bring fill soils into the alignment area from off-site locations. In areas that are identified as being contaminated or where soil contamination is suspected, appropriate sampling is required prior to disposal of the excavated soil. Characterization of the soil would be necessary prior to any excavation or removal activity, and contaminated soil would be properly disposed of at an off-site facility. Project fill soils would be characterized to verify that imported soil is free of contamination.
- Ballasts, railroad ties, and/or wooden poles that are identified as contaminated with hydrocarbons or other hazardous materials would be removed and disposed of properly at an off-site facility.

Sources: Chapter 4.0, Section 4.17.3.2 of the Final SEIS/SEIR under the heading “Hazardous Materials Impacts” and the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s)



E.22 Construction—Geotechnical, Geologic, and Seismic

- The design of the project would include establishment and implementation of storm-water BMPs, including, but not limited to, the construction site BMPs listed in Table 4-35 in Chapter 4.0, Section 4.9 of the Final SEIS/SEIR, for those areas with potentially unstable soils that are susceptible to landslide and subsidence.
- A Job Safety Analysis (JSA) would be prepared; the JSA would contain emergency procedures to cover a number of events that may occur at or near the project site by natural causes, equipment failure, or by human mistake, with earthquakes being one of these events.
- Geotechnical and geologic studies would continue to be conducted through final design of the project, and these studies would verify locations of potentially unstable soils, including areas susceptible to landslide and subsidence. Additional geotechnical and geologic analysis would be conducted and additional soil borings would be made, particularly in areas near planned bridges, the aerial guideway, retaining walls, and stations.

Sources: Chapter 4.0, Section 4.17.3.2 of the Final SEIS/SEIR under the heading “Geotechnical, Geologic, and Seismic Impacts” and the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s)

E.23 Construction—Energy

- Project specifications would require contractors to minimize idle times of construction equipment.
- Project specifications would require contractors to maintain construction equipment per manufacturers’ specification.
- Energy-efficient lighting would be used in all construction zones and staging areas.

Sources: Chapter 4.0, Section 4.17.3.2 of the Final SEIS/SEIR under the heading “Energy Impacts” and the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s)

E.24 Construction—Safety and Security

- For the duration of all construction activities, the contractor would have a designated safety officer to oversee construction work and compliance with federal, state, and local regulations, as well as the project’s contract specifications related to both worker and public safety.
- Prior to any construction activity, a TMP would be developed with input from community safety and security agencies, including the City of San Diego Fire-Rescue Department, the City of San Diego Police Department, the City of San Diego Engineering and Capital Projects Department, area hospitals, and UCSD. The TMP would identify the requirements, procedures, and protocols for coordination and communication with emergency responders during the construction period. The



procedures may include weekly coordination communications, identification of alternate routes, and other topics.

- Access to all police and fire stations as well as area hospitals would be maintained at all times during construction.
- All construction zones and staging areas would be secured using fencing, lighting, and/or night patrols to prevent unauthorized persons from entering these areas.
- Prior to any construction activity, a JSA would be prepared to protect construction workers and ensure public safety. A JSA would be developed for each significant construction activity. Refer to Chapter 6.0, Section 6.12.1 of the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s) for additional information.
- SANDAG would encourage the community safety providers to update their emergency response procedures to address construction of the project and would provide appropriate project-specific information in a timely manner.
- Contractor workers and subcontractor employees would be required to comply with MTS and NCTD safety procedures while working in MTS right-of-way and in proximity of trains operating on the Los Angeles—San Diego—San Luis Obispo Rail Corridor Agency tracks. When construction work is conducted within prescribed limits, flagmen would be required per NCTD safety procedures. The contractor's workers and subcontractor employees would be required to participate in the MTS and NCTD safety training program. Safety barriers may be placed as required to provide separation from active tracks. Temporary slow orders may be placed on train operations for certain conditions.

Sources: Chapter 4.0, Section 4.17.3.2 of the Final SEIS/SEIR under the heading "Safety and Security Impacts" and the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s)

E.25 Construction—Paleontological Resources

- When possible, construction-related impacts to potentially significant paleontological resources would be avoided by project design. During final design, the project's footprint would be reviewed further and, where possible, the footprint would be minimized to reduce potential impacts to paleontological resources.
- If resources are found, preservation in place could be achieved by one of the following methods:
 - Incorporating the site into a park or other open space
 - Covering the site with a layer of chemically stable material before constructing the project
 - Deeding the site as a permanent conservation easement

Source: *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s),



E.26 Construction—Utilities

- During final design, project engineers would coordinate closely with utility providers whose facilities would temporarily or permanently be affected by the project. Coordination efforts would identify design standards for protection and relocation of utility facilities affected by the project.
- A Utilities Relocation Plan would be developed as part of final design and would identify all required utility relocations, temporary routing, and reconstruction. The plan would also include a construction approach to minimize disruption. Refer to Chapter 4.0, Section 4.17.3.2 of the Final SEIS/SEIR under the heading “Utilities Impacts” for additional information.
- During the construction period, the construction management team periodically would supply utility providers with construction progress notices. Required short-term disruptions to utility services would be coordinated with utility providers to identify the periods when the fewest customers would be adversely affected by interruptions in service (typically at night).

Sources: Chapter 4.0, Section 4.17.3.2 of the Final SEIS/SEIR under the heading “Utilities Impacts” and the *Mid-Coast Corridor Transit Project Construction Impacts Technical Report* (SANDAG, 2014s)