

July 15, 2015

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Christine Rothman
Development Project Manager III
City of San Diego
Transportation and Storm Water Department, Operations and Maintenance
2781 Caminito Chollas, MS 44
San Diego, CA 92105

Subject: Master Storm Water System Maintenance Program- Tijuana River Valley Channel Maintenance Project Individual Noise Assessment

Dear Mrs. Rothman:

In conformance with the City of San Diego (City) modified Master Storm Water System Maintenance Program's (Master Maintenance Program or MMP) amended Site Development Permit (SDP) No. 1134892 and Program Environmental Impact Report (PEIR) Project No. 42891/SCH No. 2004101032, the attached *Individual Noise Assessment (INA) Report (2013)* is submitted as part of the Substantial Conformance Review (SCR) package for the Tijuana River Valley Channel Maintenance Project.

The 2013 INA was originally submitted as part of the approved Tijuana River Valley Channel Maintenance Project SCR package in December 2013 (hereafter 2013 SCR). Conditions related to potential noise impacts remain substantially similar to those described in the attached 2013 INA. Accordingly, this letter provides a summary technical review of the 2013 INA submitted as part of the 2013 SCR as it applies to current conditions in the Tijuana River Valley Channel Maintenance Project area. This letter and attachment serve as the basis for a SCR determination for maintenance work in 2015-2016 as part of the Tijuana River Valley Channel Maintenance Project. The technical review was performed by a qualified professional in acoustics and noise control.

Project History and Background

The Tijuana River Valley Channel Maintenance Project includes maintenance of the Tijuana River Pilot (Pilot) Channel and Smuggler's Gulch Channel as part of the MMP. The Pilot Channel is included on MMP Maps 138a through 138c and the Smuggler's Gulch Channel is included on MMP Maps 138 and 139 (City of San Diego 2011). The Pilot Channel and Smuggler's Gulch Channel maintenance project Individual Maintenance Plan (IMP) and Individual Assessment (IA) package received SCR approval in February 2013. Appropriate environmental permits were also issued by the California Department of Fish and Wildlife (CDFW), Regional Water Quality Control Board (RWQCB), United States Fish and Wildlife Service (USFWS), Army Corps of Engineers (ACOE), and the California Coastal Commission (CCC) in 2012 and 2013 based on the project scope, impacts, and mitigation. Maintenance activities in the Pilot Channel and Smuggler's Gulch Channel were conducted between September 23, 2013 and

March 14, 2014. Appropriate construction-related Best Management Practices and concurrent wetland compensatory mitigation have been implemented as part of the comprehensive channel maintenance project.

Project Description

The currently proposed maintenance of the Pilot Channel and the Smuggler's Gulch Channel includes the mechanized removal of sediment, vegetation and trash and debris from the channels. Proposed maintenance procedures for channel clearing activities in 2015-2016 as part of the Tijuana River Valley Channel Maintenance Project remain substantially similar to procedures proposed as part of the 2013 SCR and implemented in the 2013-2014 maintenance period.

The periodic maintenance of both channels is needed to restore the channels' flood conveyance capacity to their original design condition and to protect the Tijuana River National Estuarine Research Reserve from impacts due to downstream transport of accumulated sediment and trash and debris from the project area. The project incorporates removal of approximately 10,000–30,000 cubic yards of material, occupying a total of 4.31 acres.

Current Conditions

Since channel maintenance work was conducted in 2014, natural and anthropogenic processes in the upstream watershed have resulted in additional sediment, trash and debris accumulation in the channel maintenance areas. Site conditions have generally returned to pre-maintenance conditions evaluated as part of the 2013 SCR package. In addition, a qualified biologist prepared an updated Individual Biological Assessment (IBA) for the Tijuana River Pilot Channel and Smuggler's Gulch Channel maintenance project area in June 2015 (2015 IBA) to determine whether or not sensitive biological resources could be affected by the proposed maintenance. The 2013 SCR, 2015 IBA, and current conditions have been reviewed and the 2013 INA has been determined to be generally still applicable to the work anticipated this fall. Specific to the Tijuana River Channel Maintenance Project, the following conditions should be noted:

- The 2013 INA, 2015 IBA and other portions of the 2013 SCR were reviewed in June 2015 by Dudek.
- The 2013 INA indicated that temporary construction noise from the use of heavy equipment would generate noise in excess of 60 dBA Leq during the maintenance period, and that if this work were to be conducted during the avian breeding season, mitigation measures would be required.
- Mitigation measures include biological surveys to identify the locations of various types of nests (raptor, least Bell's vireo, coastal California gnatcatcher, southwestern willow flycatcher, and light-footed clapper rail), and maintenance of appropriate buffers from those nests depending on the bird species. For several species, the size of the buffer is dependent on where the noise level drops below 60 dB.

- Residential receptors would not be affected by the proposed activities. The nearest residential receptors are over 3,000 feet away from the facilities to be maintained. Residential Land Uses on Agricultural Land could potentially be affected by construction noise; therefore, the 2013 INA includes measures to reduce those impacts (installation of temporary noise-reducing barriers, or obtaining a permit from the Noise Abatement and Control Administrator).
- The mitigation measures outlined in the 2013 INA allow for an adaptive approach to noise mitigation, based on the location of nests at any given time during any breeding season. All proposed maintenance activities would be required to comply with those mitigation measures, and as a result, based on current review of the INA and the mitigation measures set forth in that analysis, it is clear that the proposed activities would not result in any new significant environmental impacts.
- Pre-maintenance pumping is planned to dry stagnant ponded water in the eastern portion of the Pilot Channel and allow mechanized equipment use. The pre-maintenance pumping will likely occur in stages. The pumping process will begin with the placement of a suction hose within the Pilot Channel near Hollister Street Bridge, placing a pump adjacent to the channel, and the placing of temporary hoses along the channel bank to a discharge location, likely near the confluence of the Pilot Channel and SG Channel. Critically silenced pumps will be used throughout the project. The second stage would involve a similar set up of equipment placed further downstream to pump water from the confluence to the downstream (western) end of the Pilot Channel. Additional pumping may be required if rains occur during the project and result in ponded water pools within the work area. If warranted, sound attenuation by placing the pumps within a 3-sided enclosure constructed on-site to block line of sight between the pump and any nearby critical occupied least Bell's vireo nests will be utilized. These measures are intended to comply fully with the USFWS Biological Opinion (FWS-SDG-08B0600-10F001) required Conservation Measures (CM) related to noise generated for work to be conducted during the breeding season. USFWS CM-4 and CM-5 allow for project construction activities to occur during the breeding season, as long as noise levels at the edge of occupied least Bell's vireo nests is kept below 60 dBA Leq1-hr (A-weighted decibels over a 1-hour average). Additional necessary stages of pre-maintenance pumping work will involve a similar set up of equipment placed further downstream and shielded to reduce noise levels to any present least Bell's vireo nests to no more than 59 dBA at 100 feet.
- Focused surveys to assess the presence of active vireo nests within a 500' buffer from where the pumps will be situated will be conducted prior to the commencement of the pumping activity. Additional surveys will be completed weekly during the duration that project activities take place during the breeding season. Pre-maintenance pumping is anticipated to begin August 1, subject to regulatory approvals, and finish by September 15. Pre-construction bird/nesting surveys and regulatory approvals are required for work conducted between January 15 and September 15. If needed, the pumping of ponded water may be continued during the maintenance activities to transport ponded water to the western end of the Pilot Channel and sufficiently dry the work area.

Mrs. Christine Rothman

Subject: Tijuana River Valley Channel Maintenance Project- Individual Noise Assessment

Appropriate mitigation and noise attenuation measures will be implemented as-needed during maintenance.

In summary, evaluation of current conditions and review of the 2013 INA do not identify potentially significant noise impacts that have not already been identified, addressed and/or mitigated by the required conditions set forth in the associated SDP and PEIR. The pre- and potential during-maintenance pumping activities do not present significant noise impacts when addressed and/or mitigated by the noise attenuation measures identified above. Therefore the proposed maintenance would substantially conform to the existing permit and environmental document.

Please contact me by phone (949.373.8317) or by e-mail (mgreene@dudek.com) with questions or requests for clarification.

Respectfully,

A handwritten signature in black ink, appearing to read "Mike Greene", with a long horizontal flourish extending to the right.

Mike Greene, INCE
Acoustician, Dudek

INDIVIDUAL NOISE ASSESSMENT REPORT

Site Name/Facility:	<u>Tijuana River Pilot Channel & Smugglers Gulch Channel</u>
	<u>138a, 138b, 138c (Tijuana River Pilot Channel) and</u>
Master Program Map No.:	<u>138 and 139 (Smuggler's Gulch Channel)</u>
Date:	<u>December 18, 2012</u>
Acoustician Name:	<u>Mark Storm, INCE Bd. Cert.</u>

Instructions: This form must be completed in its entirety for each target facility identified in the Annual Maintenance Needs Assessment report when the potential exists for sensitive wildlife to occur within 750 feet of a proposed maintenance activity. If no sensitive species are expected within 750 feet of maintenance, only the first two rows under the Existing Conditions section must be completed. Attach additional sheets as needed.

EXISTING CONDITIONS

The City of San Diego (City) has developed the Master Storm Water System Maintenance Program (MMP) (City of San Diego 2011a) to govern channel operation and maintenance activities in an efficient, economic, environmentally and aesthetically acceptable manner to provide flood control for the protection of life and property. This document provides a summary of the Individual Noise Assessment (INA) activities conducted within the Tijuana River Pilot (Pilot) Channel and the Smuggler's Gulch (SG) Channel in order to comply with the MMP's Programmatic Environmental Impact Report (PEIR) (City of San Diego 2011b).

Project Description

The channels associated with this assessment report are located in the Tijuana River Valley (Valley), within the jurisdiction of the City of San Diego (City) (Figure 1). The Tijuana River watershed covers an area of approximately 1,725 square miles, of which 73 percent is located in Mexico and 27 percent in the United States. The main Tijuana River flows in a northwesterly direction from the international border into the Valley and City jurisdiction. Approximately 21.9 square miles of the watershed (~1% of the total watershed area) is within City jurisdiction.

The Tijuana River National Estuarine Research Reserve (TRNERR) and a portion of the City of Imperial Beach are generally west of the project area located adjacent to the Tijuana River's discharge to the Pacific Ocean. The Otay-Nestor community and the United States Naval Outlying Landing Field Imperial Beach are located north of the project area; and the community of San Ysidro is located to the east.

The Pilot Channel is included on MMP Maps 138a through 138c and the SG Channel is included on MMP Maps 138 and 139 (City of San Diego 2011a). The Pilot and SG

Tijuana River Pilot Channel & Smuggler's Gulch Channel
Appendix E - Individual Noise Assessment Report

EXISTING CONDITIONS

Channels are generally located in the Valley roughly bordered by Hollister Street to the east and Monument Road to the south. The Tijuana River low flow channel splits into what are commonly referred to as the Tijuana River's Northern and Southern Channels approximately 800 feet east of Hollister Street. The Pilot Channel follows the Southern Channel.

The Valley, including the project area, is within the Federal Emergency Management Agency's (FEMA) Special Flood Hazard Areas Subject to Inundation by the 1-percent Annual Chance Flood (100-year floodplain). The project areas are zoned OF-1-1 (Open Space-Floodplain) and AR-1-1 (Agricultural/Residential); and are designated for Open Space and Agricultural land uses in the Tijuana River Valley Land Use Plan. In addition, the project area is within the boundaries of the County of San Diego's 2.7 square mile Tijuana River Valley Regional Park (Regional Park). The project area is also within the City's Multiple Species Conservation Program's Multi-Habitat Planning Area (MHPA), which delineates core biological resource areas and corridors targeted for conservation.

The project consists of maintenance and dredging of the Pilot and SG channels to remove anthropogenic-derived sediment and trash that accumulates as a result of development and other practices in the upstream watershed. The removal of sediment and trash is conducted in order to maintain flow conveyance capacities and reduce the risk of flooding to public and private infrastructure in the Valley.

Description of creek/channel geometry(length, width, and depth):

Pilot Channel

The Pilot Channel was originally excavated in 1993 within the Southern Channel. It has been irregularly maintained since that time as an earthen trapezoidal channel that is approximately 5 feet deep, with a 23-foot top width, and a 15-foot streambed width. According to the MMP, the Pilot Channel was constructed to divert wet-weather flows from 2- to 5-year storm events into the Southern Channel (City of San Diego 2011b). The Pilot Channel stretches from 100 feet east to 5,300 feet west of Hollister Street for a total length of 5,400 feet and it flows roughly in an east-west direction.

SG Channel

The SG Channel is an existing historical agricultural channel with manufactured berms. The contributing sub-watershed area is approximately 6.7 square miles, primarily located south of the international border within Canon de los Mataderos. The SG Channel, as originally constructed, is an earthen channel approximately 20 feet wide and 15 feet deep. The SG Channel is tributary to the South Channel and flows in a northerly direction, from the international border past Monument Road until it

Tijuana River Pilot Channel & Smuggler's Gulch Channel
Appendix E - Individual Noise Assessment Report

EXISTING CONDITIONS

confluences with the Pilot Channel. The portion of the SG Channel maintained by the City extends for a distance of approximately 3,040 feet.

Survey Methods and Date:

Existing typical daytime outdoor ambient sound pressure levels (SPL) were measured at various locations that (to the extent practical) are near or coincident with a periphery approximately 750 feet from the above-referenced maintenance facility alignments. The measurements were limited to daytime periods due to the understanding that proposed facility maintenance activities would not occur during the evening (7 p.m. to 10 p.m.) or nighttime (10 p.m. to 7 a.m.) periods. The 750-foot periphery was selected due to the above-stated instructions for this INA and because a similar distance (at which 60 dBA from maintenance activity in the channel was anticipated) value was presented in the Final Recirculated Master Storm Water System Maintenance Program PEIR (PEIR). This periphery, and the bounded area within, overlaps land owned by the City of San Diego, San Diego County, the State of California, and private owners as shown in Figure 1. The project site is also located within the City's Multiple Species Conservation Program's Multi-Habitat Planning Area (MHPA) and the County of San Diego's Tijuana River Valley Regional Park. According to a City of San Diego Development Services Department official zoning map (City of San Diego, 2007), lands within this bounded area and those adjacent to it are zoned as either open space or agricultural. Observed sample land uses of the latter included agricultural operations and equestrian facilities. There also appear to be occupied residential land uses along Monument Road. The 60 dBA sound level is consistent with part 5 from the City of San Diego California Environmental Quality Act (CEQA) Significance Determination Thresholds (City of San Diego, 2011).

Attended SPL measurements were performed and collected with a Larson Davis Model 820 ANSI Type 1 sound level meter (SLM) (Serial Number 1655) on October 30th, 2012. SLM calibration was field-checked with a Larson Davis Model CAL200 (SN 3704) acoustic calibrator. Measurements were conducted by a member of the URS San Diego acoustics and noise control practice team, as directed by the author of this INA (Mark Storm, an Institute of Noise Control Engineering [INCE] Board Certified Member having 20 years of noise control engineering experience) and in a manner compatible with ISO 1996 guidelines, including wind-screened microphone height at approximately 5-feet above grade.

There were several apparent typical existing noise sources present in proximity to the chosen measurement locations near the Tijuana River Pilot (Pilot) and Smugglers Gulch (SG) Channels contributing to the normal ambient sound levels. These sources include frequent military helicopter flyover (from nearby Navy Outlying Field (NOLF) Imperial Beach) and constant distant ground transportation traffic noise. These two

Tijuana River Pilot Channel & Smuggler's Gulch Channel
Appendix E - Individual Noise Assessment Report

EXISTING CONDITIONS

sources affect all nine measurement locations to varying degrees. Other observed or audible sound sources include intermittent fixed-wing aircraft flyovers, nearby roadway traffic, horse vocalization, dog barking, and metal clanking from nearby ranches.

Meteorological conditions during the measurement period were typical and appropriate for conducting ambient noise measurements. Air temperatures at the measurement locations varied from 69°F to 79°F, with 48 percent to 57 percent relative humidity (RH). Winds ranged from zero miles-per-hour to nine miles-per-hour from the west. Table 1 below presents a summary of measured data collected at the nine survey locations. A-weighted equivalent sound levels (L_{eq}) represent the energy-average SPL over a ten to fifteen-minute period; and the L_{90} values statistically represent the SPL exceeded ninety percent of the time over these same measurement periods, thus characterizing what might be considered the “background” (e.g., distant highway traffic, other fairly continuous sources of noise, and the amalgam of distant but indiscernible noise) sound exclusive of intermittent dominant sound sources such as the frequent military helicopter sorties.

Table 1 Summary of Existing Outdoor Ambient Sound Levels in Project Vicinity

Survey Location ID	Measured Existing Ambient Outdoor Sound Pressure Level (SPL)	
	L_{eq} (dBA)	L_{90} (dBA)
ST1	56	46
ST2	50	38
ST3	51	37
ST4	53	40
ST5	46	41
ST6	56	46
ST7	45	34
ST8	55	41
ST9	69	51

The large differential (i.e., greater than 10 dBA) between the L_{eq} and L_{90} levels is not unexpected due to the observed helicopter flyover activity. For instance, Figure 4-7 from the 2011 AICUZ Study Update for NAS North Island and Navy Outlying Field (NOLF) Imperial Beach indicates that anticipated aircraft operations noise in the project area west of 15th Avenue may range from 60-65 Community Noise Equivalent Level (CNEL), which translates to approximately 53-58 hourly L_{eq} if operations were constant throughout the day. Measured L_{eq} at ST1, ST6, and ST9 that are nearest to NOLF appear consistent with this expected aircraft operations noise level range.

Tijuana River Pilot Channel & Smuggler's Gulch Channel
Appendix E - Individual Noise Assessment Report

EXISTING CONDITIONS				
Are there sensitive wildlife species within 750 feet of proposed maintenance?				
YES	<input checked="" type="checkbox"/>	NO		
Sensitive Wildlife Observed/Detected: Describe sensitive wildlife anticipated to occur within 750 feet of maintenance that were observed and the closest distance to proposed maintenance.				
<p>As reported in the Individual Biological Assessment (IBA), two adult monarchs (<i>Danaus plexippus</i>), a CNDDDB Rank S3 species, were observed flying over the site (no larval host plants were observed). Yellow-Breasted Chat (<i>Icteria virens</i>) (state Species of Special Concern) was identified by call, but was not visually confirmed. One Coastal California Gnatcatcher (<i>Polioptila californica californica</i>) (federal Threatened, state Species of Special Concern) was seen and heard in the singlewhorl burrobrush shrubs between SG Channel and Staging Area B (Figure 3). Raptors, including a female Northern Harrier (<i>Circus cyaneus</i>) (state Species of Special Concern), Red-Shouldered Hawk (<i>Buteo lineatus</i>) and a Red-Tailed Hawk (<i>Buteo jamaicensis</i>), were seen and heard in and over the maintenance area. The large black willows and occasional eucalyptus (<i>Eucalyptus</i> sp.) trees immediately adjacent to the Pilot Channel could support nests of raptors such as the two detected Buteo hawks (these trees would not be removed by the channel maintenance.)</p> <p>Riparian woodland and adjacent riparian scrub along the northern section of SG Channel and the Pilot Channel, where Southern Riparian Woodland lines the channels, contain suitable habitat for other sensitive species. Least Bell's Vireo (<i>Vireo bellii pusillus</i>) (state and federal Endangered) has been documented in the project area, and part of the Pilot Channel lies within designated critical habitat for this species; Southwestern Willow Flycatcher (<i>Empidonax trailii extimus</i>) (state and federal Endangered) and Western yellow-billed cuckoo (<i>Coccyzus americanus occidentalis</i>) (state Endangered, federal candidate for listing) have been documented further east in the same CNDDDB quadrangle, and may use habitat in or near the project area. Yellow-breasted Chat has been documented in the same CNDDDB quadrangle and, according to the San Diego Bird Atlas, has been observed in the Tijuana River, so this species may use suitable habitat in the project vicinity. Coastal California Gnatcatcher has been documented on mesa slopes near the southern end of the site, may use coastal sage scrub upslope of the southern end of SG Channel in Map 139, and may forage in shrubs near the maintenance area. Although the Light-Footed Clapper Rail (<i>Rallus longirostris levipes</i>) (state and federal Endangered) is unlikely to use habitat within the maintenance area, it has been documented nearby in the Tijuana River Valley (Dairy Mart Ponds and the Tijuana River estuary) and implementation of proposed project</p>				

Tijuana River Pilot Channel & Smuggler's Gulch Channel
Appendix E - Individual Noise Assessment Report

EXISTING CONDITIONS

conservation measures will avoid and minimize potential adverse effects to this listed species, for which no incidental take is anticipated.

MAINTENANCE IMPACTS

List the equipment to be used during maintenance and anticipated noise levels associated with each.

Channel Maintenance Activity

Per the City of San Diego plan drawing notes for the maintenance of Pilot Channel ("Map 137A-C"), the following mechanized equipment is expected for activity resembling the "In-channel Maintenance (Full)" category description on page 4.6-6 of the Final Recirculated Master Storm Water System Maintenance Program PEIR (PEIR). Corresponding estimates of individual equipment reference sound level (dBA, L_{max} at 50 feet) and acoustical usage factor (% of an hour) are from Federal Highway Administration (FHWA) Road Construction Noise Model (RCNM) User's Guide Table 1 (FHWA, 2006).

- "D9 Dozer" (Dozer, 85 dBA, 40%)
- "Cat 345 Excavator" (Excavator, 85 dBA, 40%)
- "Case 821 Front Loader" (Front End Loader, 80 dBA, 40%)
- "Rock Trucks" (Dump Truck, 84 dBA, 40%)
- "Bobcat" (All Other Equipment > 5 HP, 85 dBA, 50%)
- "Mini Excavator" (All Other Equipment > 5 HP, 85 dBA, 50%)
- "Water Truck" (Dump Truck, 84 dBA, 40%)

Stockpile Activity

Per information received via email from the City of San Diego (Jarque, 11/16/12), the following mechanized equipment is expected for stockpile/staging areas "B" and "D". Corresponding estimates of individual equipment reference sound level (dBA, L_{max} at 50 feet) are from FHWA RCNM User's Guide Table 1 (FHWA, 2006), and acoustical usage factors are calculated from estimates of equipment/vehicle usage received from the City of San Diego (Jarque, 11/16/12).

Staging Area "B"

- "Back-hoe" (backhoe, 80 dBA, 100%)
- "Front-end Loader" (Front End Loader, 80 dBA, 100%)
- "Water Truck" (Dump Truck, 84 dBA, 17%)

**Tijuana River Pilot Channel & Smuggler's Gulch Channel
Appendix E - Individual Noise Assessment Report**

MAINTENANCE IMPACTS
<ul style="list-style-type: none"> • “(2) Rock Trucks” (Dump Truck, 84 dBA, 30%) <p><u>Staging Area “D”</u></p> <ul style="list-style-type: none"> • “Back-hoe” (backhoe, 80 dBA, 100%) • “Front-end Loader” (Front End Loader, 80 dBA, 100%) • “Water Truck” (Dump Truck, 84 dBA, 13%) • “(2) Dump Trucks” (Dump Truck, 84 dBA, 10%)
<p><u>Potential Additional Equipment</u></p> <p>If additional equipment or processes were added to these above anticipated rosters, such as de-watering operations involving pumps and other components that may have the potential for operating over portions of the Project duration, the aggregate noise level from maintenance activity would be expected to rise. The magnitude of this rise or additive effect would depend on a number of factors, including as follows:</p> <ul style="list-style-type: none"> • Quantity of operating process and activities, and their individual equipment or components; • Location of the noise emitters, and their distance to noise-sensitive receivers; • Sound power levels of the noise emitters, which are typically related to consumed power levels and/or fluid or mechanical capacities; and, • Duration of the operating processes and their duty cycles (or, frequency of noise emission: continuous, intermittent, or impulsive?). <p>Definition of these factors would depend on Project needs or conditions as they are encountered, such as what may become the need for de-watering pumps—even while such equipment is not currently expected.</p>
<p>Calculate the combined maximum hourly noise level associated with simultaneous operation of equipment during maintenance. Estimate the distance to the 60 dBA Leq including existing ambient noise sources affecting the maintenance area.</p>
<p><u>Channel Maintenance Activity</u></p> <p>This analysis assumes that during a typical hour when maintenance activity occurs, all seven identified equipment may be operating simultaneously from a single point within the channel at the indicated usage factors, resulting in an aggregate reference sound level (i.e., the logarithmic sum of the seven, with each adjusted by its usage factor) of 89 dBA L_{eq} at 50 feet. Using this aggregate reference sound level, and accounting for geometric divergence (6 dBA per doubling of distance), atmospheric acoustical absorption (-1 dBA per 1000 feet), ground acoustical absorption (maximum of -4.8 dBA, per ISO 9613-2, eq. 10), and ignoring any potentially beneficial topographical</p>

Tijuana River Pilot Channel & Smuggler's Gulch Channel
Appendix E - Individual Noise Assessment Report

MAINTENANCE IMPACTS

occlusion between source and receiver, a project sound level of 60 dBA hourly L_{eq} may be expected at a distance of approximately 750 feet from a position along the channel centerline.

For purposes of assessing potential noise impacts to nearby residential uses on agriculturally-zoned land near the project area, such as those along Monument Road, the distance at which 75 dBA hourly L_{eq} (either according to the San Diego Noise Ordinance impact threshold per 59.5.0401 or 59.5.0404) is anticipated is approximately 170 feet. The distances at which project noise levels are expected, at 5 dBA decrements and in terms of hourly L_{eq} , are also presented in Table 2 below.

Stockpile Activity

Based on the expected equipment and their usage levels from the preceding paragraphs, this analysis anticipates a reference sound level as high as 86 dBA L_{eq} at 50 feet for Stockpile/Staging Area "B" and 84 dBA L_{eq} at 50 feet for Stockpile/Staging Area "D". After accounting for naturally-occurring sound attenuation in the same fashion as for aggregate noise emission from maintenance activity in the channel, this analysis predicts a project sound level of 60 dBA hourly L_{eq} might also be expected at a distance of approximately 560 feet from Stockpile/Staging Area "B" and approximately 480 feet from Stockpile/Staging Area "D".

Channel + Stockpile "B" Activity

Along an approximately 600-foot segment of the SG Channel alignment that is immediately adjacent to Stockpile/Staging Area "B", it is possible that concurrent activity would take place at both locations and therefore create a condition where noise from the two activities would be greater than either of them separately. The corresponding distances for expected project noise levels from a north-to-south 600-foot long line segment between the channel and Stockpile/Staging Area "B" appear in Table 2.

Access Roads

Along an access road that connects a channel alignment to a stockpile, the source of noise would largely be rock truck movements. Were one to assume five truckloads or pass-bys per hour (as does the analysis in the aforementioned PEIR), and a pass-by duration of about one minute, the resulting estimate for acoustical usage factor would be about 8%, and the expected reference noise level would therefore be 73 dBA. After accounting for naturally-occurring attenuation, a sound level of 60 dBA hourly L_{eq} may be expected at a distance of approximately 155 feet from a position along the access road centerline.

The occurrence of this anticipated 60 dBA hourly L_{eq} project noise level is presented as a single composite contour on Figure 1. Note that this contour represents a

Tijuana River Pilot Channel & Smuggler's Gulch Channel
Appendix E - Individual Noise Assessment Report

MAINTENANCE IMPACTS

boundary showing the aggregate extent, over the one-month duration of the project, where this project noise level may attain 60 dBA hourly L_{eq} at a perpendicular distance in feet according to Table 2.

Table 2 Approximated Distances for Predicted Project Noise Levels

Project Activity	Approximate distance (feet) at which predicted project activity noise level (hourly L_{eq}) is expected to occur					
	75 dBA	70 dBA	65 dBA	60 dBA	55 dBA	50 dBA
Channel	170	280	470	750	1275	2065
Stockpile "B"	125	200	335	560	940	1525
Channel + Stockpile "B"	200	325	550	920	1525	2400
Stockpile "D"	110	175	285	480	800	1325
Access Road	45	70	100	155	250	420

Would sensitive wildlife receptors be affected by maintenance noise in excess of 60 dBA L_{eq} ?

YES ☒ NO ☐

Observed sensitive wildlife receptors included those well within a 750-foot buffer distance from the channels under consideration in this study; thus, *when present during their breeding seasons*, they would be exposed to maintenance noise in excess of 60 dBA hourly L_{eq} . Because project noise is not expected to occur during these breeding seasons, no affects are anticipated. Project noise would be expected to be less than 60 dBA hourly L_{eq} beyond this buffer distance, and diminish in magnitude with increasing distance.

Tijuana River Pilot Channel & Smuggler's Gulch Channel
Appendix E - Individual Noise Assessment Report

MITIGATION

What mitigation measures would be required to avoid adverse impacts to sensitive wildlife (e.g. barriers or limitations on hours of operation)?

Temporary construction noise from the use of heavy equipment would generate noise in excess of 60 dBA L_{eq} during the maintenance period. Maintenance conducted outside the breeding/nesting season for protected avian species would not result in a significant indirect noise impact and no noise attenuation mitigation is required.

If work is proposed between January 15 (start of the raptor nesting season) and August 15, a pre-maintenance survey for active raptor nests shall be conducted by a qualified biologist in areas supporting suitable habitat, such as within the mature tall black willows and occasional eucalyptus trees along the Pilot Channel. If active raptor nests are found, maintenance shall not occur within 300 feet of a Cooper's Hawk (*Accipiter cooperii*) nest, 900 feet of a Northern Harrier's nest, or 500 feet of any other raptor's nest until any fledglings have left the nest.

In compliance with the USFWS Section 7 BO and Master Program PEIR Mitigation Measure 4.1.2, protocol surveys are required if maintenance is proposed during the vireo breeding season (March 15 - September 15). In compliance with PEIR Mitigation Measure 4.1.2, and 4.1.8, protocol surveys are required if maintenance and noise levels exceeding 60 dBA within the MHPA during the Coastal California Gnatcatcher breeding season (March 1 – August 15). And although work is not proposed after March 15, protocol surveys for the Southwestern Willow Flycatcher are required during the flycatcher breeding season (May 1 to August 30) September 1).

During the period of March 1st to March 14th, were maintenance activity to occur in the SG Channel adjacent to Stockpile/Staging Area "B" during this portion of Coastal California Gnatcatcher breeding season, our predictive noise analysis herein anticipates that noise mitigation measures would be needed due to the proximity of habitat as shown in Figure 1. One option for mitigation would be the installation of temporary noise-reducing barriers, such as an arrangement of two rows of stacked hay bales that sandwich and support a vertical plywood board (e.g., minimum ½" thick), having a height sufficient to provide a visual occlusion between source and receiver (typically 10 to 12 feet high) at the following locations:

Aligned roughly east-to-west, along the south side of Monument Road, extending from the 60 dBA noise buffer line that intercepts Monument Road adjacent to private parcel 6630102900 and the intersection of Monument Road and Hollister Street; and,

Along the western half of the Nevada-shaped site boundary for Stockpile/Staging Area "D".

**Tijuana River Pilot Channel & Smuggler's Gulch Channel
Appendix E - Individual Noise Assessment Report**

MITIGATION

If channel maintenance activity were occurring further north during this limited timeframe (March 1st through March 14th), temporary barriers would be recommended at these locations:

Along the west, south and east sides of the Stockpile/Staging Area "B" boundary; and, along the western half of the Nevada-shaped site boundary for Stockpile/Staging Area "D".

Installation of such temporary barriers would be expected to reduce predicted maintenance noise levels in the potentially affected Coastal California Gnatcatcher habitat areas adjacent to the Project and thus decrease the distance at which 60 dBA L_{eq} is anticipated. At receiver distances close to the barrier, barrier noise attenuation is greater; and at distances far from the barrier, barrier noise attenuation is less and may be adversely affected by meteorological conditions. For this reason, and due to the proximity of known habitat and considerable extent of this noise mitigation (over a thousand feet for either case described above), URS strongly recommends that maintenance activity be avoided during this species' breeding season.

The endangered Light-Footed Clapper Rail is considered to have a low potential to occur in or adjacent to the project area and is unlikely to use habitat within the maintenance area. This species has been documented nearby in the Tijuana River Valley (Dairy Mart Ponds and the Tijuana River estuary), and the project's USFWS Section 7 Consultation BO has established conservations measures that will avoid and minimize potential impacts to the clapper rail. These include the requirements that channel maintenance be performed outside of the Light-Footed Clapper Rail breeding season of March 15 through September 15, that a pre-maintenance survey be conducted by a biologist familiar with clapper rail biology and ecology to confirm that clapper rails are not present, and that the clapper rail biologist will oversee compliance with conservation measures for the clapper rail (see IBA).

For reader convenience, applicable noise-related PEIR Mitigation Measures have been included in their entirety as Attachment 1.

ADDITIONAL COMMENTS OR RECOMMENDATIONS

Potential Temporary Noise Impacts to Residential Receptors on Nearest Residentially-zoned Land

While there is a residential community north of Sunset Avenue on residentially-zoned land, with homes apparently nearest to the project at Hollister and Atherton, this location is over 3,000 feet distant from the facilities to be maintained and thus not expected to experience project noise levels that exceed the San Diego Municipal Code daytime noise ordinance (59.5.0401) limit of 50 dBA hourly L_{eq} or the 75 dBA L_{eq}

Tijuana River Pilot Channel & Smuggler's Gulch Channel
Appendix E - Individual Noise Assessment Report

ADDITIONAL COMMENTS OR RECOMMENDATIONS

limit for daytime-allowed construction noise per 59.5.0404 (if the project maintenance activity were to be classified as construction noise). Thus, no noise impact is expected for this residential community.

Potential Temporary Noise Impacts to Residential Land Uses on Agricultural Land

For apparent occupied homes on privately-owned properties along Monument Road that are zoned as agricultural districts, the San Diego Municipal Code daytime noise ordinance (59.5.0401) limit of 75 dBA hourly L_{eq} or the 75 dBA L_{eq} limit for daytime-allowed construction noise per 59.5.0404 (if the project maintenance activity were to be classified as construction noise) would apply for assessing potential noise impact assessment. As shown in Figure 1, private land parcels 6630101300, 6630102900, 6630103000, and 6630103900 are geographically adjacent to the SG Channel and/or Stockpile/Staging Area "B" and might thus be exposed to project noise levels of 75 dBA L_{eq} per the aforementioned predicted distances shown in Table 2 at which this noise level is expected to occur. These project noise levels, and thus impacts that may be generated as a result, would be temporary in nature—lasting only as long as the expected project duration: one month for the maintenance activity associated with these storm water facilities.

Installation of temporary noise-reducing barriers, such as an arrangement of two rows of stacked hay bales that sandwich and support a vertical plywood board (e.g., ½" thick), and a height sufficient to provide a visual occlusion between source and receiver (typically 10 to 12 feet high) at the following locations would be expected to reduce predicted project noise levels by 3-5 dBA L_{eq} and thus decrease the distances at which 75 dBA L_{eq} is anticipated:

Aligned north-to-south, along the border of private parcel 6630102900 and City of San Diego parcels 6630101100 and 6630103800; and,

Aligned north-to-south, along the border of private parcel 6630101300 and City of San Diego parcel 6630103800.

The barriers, if implemented, would only need to be as long as twice the distance currently indicated in Table 2 for 75 dBA L_{eq} , with the midpoint perpendicular to the geographic center of maintenance activity within SG Channel and/or Stockpile/Staging Area "B". Alternately, to avoid moving the barrier segments as project progress occurs within the channel alignment, the barrier lengths might be assembled to match those of the indicated adjoining parcel boundaries. For a number of reasons, neither of these barrier implementation options is recommended:

Each would likely incur an unreasonable added project cost for mitigating temporary noise emanating from this proposed City of San Diego maintenance activity that would benefit the public interest and likely help prevent what might otherwise be emergency

Tijuana River Pilot Channel & Smuggler's Gulch Channel
Appendix E - Individual Noise Assessment Report

ADDITIONAL COMMENTS OR RECOMMENDATIONS

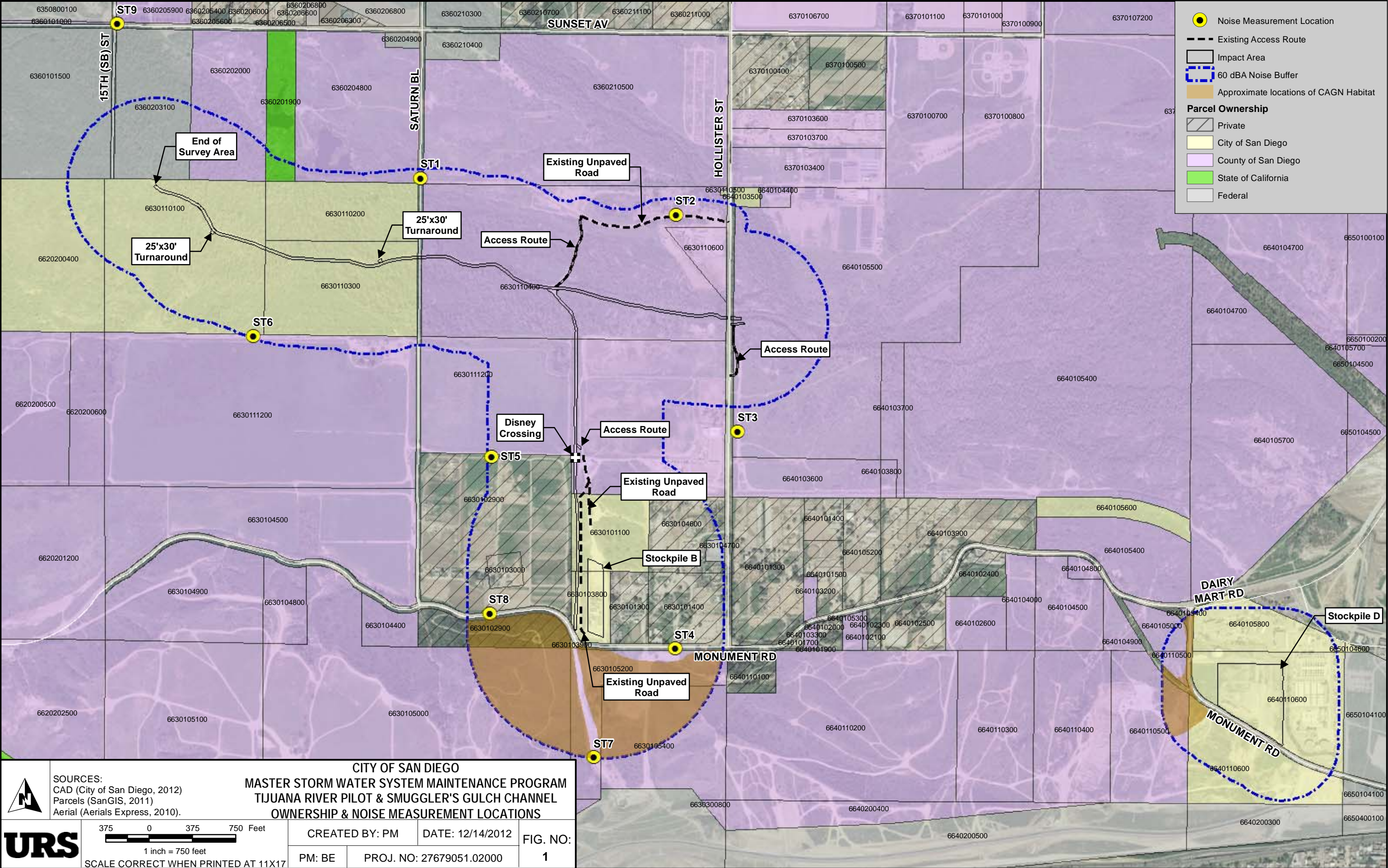
work (e.g., channel flooding) that is exempt from noise impact consideration under 59.5.0404(c). Noise levels reduced by the barrier may still exceed 75 dBA Leq, but over regions of the effected private properties where there are no occupied residential structures.

Instead, URS recommends that the City of San Diego applies for a permit, to be reviewed and granted by the Noise Abatement and Control Administrator (NACA), which would allow this temporary construction-type noise to occur without barriers or other typical forms of mitigation. One reason for requesting this kind of permit is that, according to the City of San Diego (Jarque, 11/29/12), maintenance work may need to occur on Sundays and some holidays, which if defined as construction noise is normally prohibited per 59.5.0404(a). In addition, for the bulleted reasons above and because the project noise is only expected to occur during the day (and thus not disrupt quiet nighttime ambient levels that current property owners may enjoy) URS believes the City has reasonable basis to anticipate the granting of such a permit.

Even if such a permit is successfully applied for and granted, URS recommends that motorized maintenance equipment, as well as portable or "hand-held" powered tools involved in any activities, be well-maintained and fitted with original or better than factory-approved noise control features such as sound attenuating air intakes and exhaust mufflers.

Attachment 1: Applicable noise-related PEIR Mitigation Measures

Puh: G:\gis\projects\1577\2767905\map_docs\mxr\Tijuana\Noise.mxd, Lauren_Rizzo, 12/14/2012, 10:34:23 AM



SOURCES:
CAD (City of San Diego, 2012)
Parcels (SanGIS, 2011)
Aerial (Aerials Express, 2010).

URS

375 0 375 750 Feet

1 inch = 750 feet

SCALE CORRECT WHEN PRINTED AT 11X17

CITY OF SAN DIEGO
MASTER STORM WATER SYSTEM MAINTENANCE PROGRAM
TIJUANA RIVER PILOT & SMUGGLER'S GULCH CHANNEL
OWNERSHIP & NOISE MEASUREMENT LOCATIONS

CREATED BY: PM

DATE: 12/14/2012

FIG. NO:

PM: BE

PROJ. NO: 27679051.02000

1

Attachment 2

Applicable Noise-Related PEIR Mitigation Measures

BIOLOGICAL RESOURCES

Mitigation Measure 4.3.13: Prior to commencing any maintenance activity which may impact sensitive biological resources, the monitoring biologist shall verify that the following actions have been taken, as appropriate:

- Fencing, flagging, signage, or other means to protect sensitive resources to remain after maintenance have been implemented;
- Noise attenuation measures needed to protect sensitive wildlife are in place and effective; and/or
- Nesting raptors have been identified and necessary maintenance setbacks have been established if maintenance is to occur between January 15 and August 31.

The designated biological monitor shall be present throughout the first full day of maintenance, whenever mandated by the associated IBA. Thereafter, through the duration of the maintenance activity, the monitoring biologist shall visit the site weekly to confirm that measures required to protect sensitive receivers (e.g., flagging, fencing, noise barriers) continue to be effective. The monitoring biologist shall document monitoring events via a Consultant Site Visit Record. This record shall be sent to the Maintenance Manager (MM) each month. The MM will forward copies to the Mitigation Monitoring Coordinator (MMC).

Mitigation Measure 4.3.20: If no surveys are completed and no sound attenuation devices are installed, it will be assumed that the habitat in question is occupied by the appropriate species and that maintenance activities would generate more than 60 dBA L_{eq} within the habitat requiring protection. All such activities adjacent to the protected habitat shall cease for the duration of the breeding season of the appropriate species and a qualified biologist shall establish a limit of work.

LAND USE

Mitigation Measure 4.1.3: If a listed species is located within 500 feet of a proposed maintenance activity and maintenance would occur during the associated breeding season, an analysis of the noise generated by maintenance activities shall be completed by a qualified acoustician (possessing current noise engineer license or registration with monitoring noise level experience with listed animal species) and approved by the ADD Environmental Designee. The analysis shall identify the location of the 60 dBA L_{eq} noise

contour on the maintenance plan. The report shall also identify measures to be undertaken during maintenance to reduce noise levels.

Mitigation Measure 4.1.4: Based on the location of the 60 dBA L_{eq} noise contour and the results of the protocol surveys, the Project Biologist shall determine if maintenance has the potential to impact breeding activities of listed species. If one or more of the following species are determined to be significantly impacted by maintenance, then maintenance (inside and outside the MHPA) shall avoid the following breeding seasons unless it is determined that maintenance is needed to protect life or property.

- Coastal California gnatcatcher (between March 1 and August 15 inside the MHPA only; no restrictions outside MHPA);
- Least Bell's vireo (between March 15 and September 15); and
- Southwestern willow flycatcher (between May 1 and September 1).

Mitigation Measure 4.1.5: If maintenance is required during the breeding season for a listed bird to protect life or property, then the following conditions must be met:

- At least two weeks prior to the commencement of maintenance activities, under the direction of a qualified acoustician, noise attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from maintenance activities shall not exceed 60 dBA hourly average at the edge of occupied habitat. Concurrent with the commencement of maintenance activities and the maintenance of necessary noise attenuation facilities, noise monitoring shall be conducted at the edge of the occupied habitat area to ensure that noise levels do not exceed 60 dBA hourly average. If the noise attenuation techniques implemented are determined to be inadequate by the qualified acoustician or biologist, then the associated maintenance activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season of the subject species, as noted above.
- Maintenance noise shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the maintenance activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dBA hourly average. If not, other measures shall be implemented in consultation with the biologist and the ADD, as necessary, to reduce noise levels to below 60 dBA hourly average or to the ambient noise level if it already exceeds 60 dBA hourly average. Such measures may include, but are not limited to, limitations on the placement of maintenance equipment and the simultaneous use of equipment.
- Prior to the commencement of maintenance activities that would disturb sensitive resources during the breeding season, the biologist shall ensure that all fencing,

staking and flagging identified as necessary on the ground have been installed properly in the areas restricted from such activities.

- If noise attenuation walls or other devices are required to assure protection to identified wildlife, then the biologist shall make sure such devices have been properly constructed, located and installed.

Mitigation Measure 4.1.8: Prior to commencing any maintenance in, or within 500 feet of any area determined to support coastal California gnatcatchers, the ADD Environmental Designee shall verify that the MHPA boundaries and the following project requirements regarding the coastal California gnatcatcher are shown on the maintenance plans:

NO MAINTENANCE ACTIVITIES SHALL OCCUR BETWEEN MARCH 1 AND AUGUST 15, THE BREEDING SEASON OF THE COASTAL CALIFORNIA GNATCATCHER, UNTIL THE FOLLOWING REQUIREMENTS HAVE BEEN MET TO THE SATISFACTION OF THE ADD ENVIRONMENTAL DESIGNEE:

- a. A QUALIFIED BIOLOGIST (POSSESSING A VALID ENDANGERED SPECIES ACT SECTION 10(a)(1)(A) RECOVERY PERMIT) SHALL SURVEY THOSE HABITAT AREAS WITHIN THE MHPA THAT WOULD BE SUBJECT TO MAINTENANCE NOISE LEVELS EXCEEDING 60 DECIBELS (dBA) HOURLY AVERAGE FOR THE PRESENCE OF THE COASTAL CALIFORNIA GNATCATCHER. SURVEYS FOR THE COASTAL CALIFORNIA GNATCATCHER SHALL BE CONDUCTED PURSUANT TO THE PROTOCOL SURVEY GUIDELINES ESTABLISHED BY THE U.S. FISH AND WILDLIFE SERVICE WITHIN THE BREEDING SEASON PRIOR TO THE COMMENCEMENT OF ANY MAINTENANCE. IF GNATCATCHERS ARE PRESENT, THEN THE FOLLOWING CONDITIONS MUST BE MET:

1. BETWEEN MARCH 1 AND AUGUST 15, MAINTENANCE OF OCCUPIED GNATCATCHER HABITAT SHALL BE PERMITTED. AREAS RESTRICTED FROM SUCH ACTIVITIES SHALL BE STAKED OR FENCED UNDER THE SUPERVISION OF A QUALIFIED BIOLOGIST; AND
2. BETWEEN MARCH 1 AND AUGUST 15, NO MAINTENANCE ACTIVITIES SHALL OCCUR WITHIN ANY PORTION OF THE SITE WHERE MAINTENANCE ACTIVITIES WOULD RESULT IN NOISE LEVELS EXCEEDING 60 dB(A) HOURLY AVERAGE AT THE EDGE OF OCCUPIED GNATCATCHER HABITAT. AN

ANALYSIS SHOWING THAT NOISE GENERATED BY MAINTENANCE ACTIVITIES WOULD NOT EXCEED 60 dBA HOURLY AVERAGE AT THE EDGE OF OCCUPIED HABITAT MUST BE COMPLETED BY A QUALIFIED ACOUSTICIAN (POSSESSING CURRENT NOISE ENGINEER LICENSE OR REGISTRATION WITH MONITORING NOISE LEVEL EXPERIENCE WITH LISTED ANIMAL SPECIES) AND APPROVED BY THE CITY MANAGER AT LEAST TWO WEEKS PRIOR TO THE COMMENCEMENT OF MAINTENANCE ACTIVITIES. PRIOR TO THE COMMENCEMENT OF MAINTENANCE ACTIVITIES DURING THE BREEDING SEASON, AREAS RESTRICTED FROM SUCH ACTIVITIES SHALL BE STAKED OR FENCED UNDER THE SUPERVISION OF A QUALIFIED BIOLOGIST; OR

3. AT LEAST TWO WEEKS PRIOR TO THE COMMENCEMENT OF MAINTENANCE ACTIVITIES, UNDER THE DIRECTION OF A QUALIFIED ACOUSTICIAN, NOISE ATTENUATION MEASURES (e.g., BERMS, WALLS) SHALL BE IMPLEMENTED TO ENSURE THAT NOISE LEVELS RESULTING FROM MAINTENANCE ACTIVITIES WILL NOT EXCEED 60 dBA HOURLY AVERAGE AT THE EDGE OF HABITAT OCCUPIED BY THE COASTAL CALIFORNIA GNATCATCHER. CONCURRENT WITH THE COMMENCEMENT OF MAINTENANCE ACTIVITIES AND THE MAINTENANCE OF NECESSARY NOISE ATTENUATION FACILITIES, NOISE MONITORING* SHALL BE CONDUCTED AT THE EDGE OF THE OCCUPIED HABITAT AREA TO ENSURE THAT NOISE LEVELS DO NOT EXCEED 60 dBA HOURLY AVERAGE. IF THE NOISE ATTENUATION TECHNIQUES IMPLEMENTED ARE DETERMINED TO BE INADEQUATE BY THE QUALIFIED ACOUSTICIAN OR BIOLOGIST, THEN THE ASSOCIATED MAINTENANCE ACTIVITIES SHALL CEASE UNTIL SUCH TIME THAT ADEQUATE NOISE ATTENUATION IS ACHIEVED OR UNTIL THE END OF THE BREEDING SEASON (AUGUST 16).

* Maintenance noise shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the maintenance activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dBA hourly average or to the ambient noise level if it already exceeds 60 dBA hourly average. If not, other measures shall be implemented in consultation with the biologist and the ADD

environmental designee, as necessary, to reduce noise levels to below 60 dBA hourly average or to the ambient noise level if it already exceeds 60 dBA hourly average. Such measures may include, but are not limited to, limitations on the placement of maintenance equipment and the simultaneous use of equipment.

- b. IF COASTAL CALIFORNIA GNATCATCHERS ARE NOT DETECTED DURING THE PROTOCOL SURVEY, THE QUALIFIED BIOLOGIST SHALL SUBMIT SUBSTANTIAL EVIDENCE TO THE CITY MANAGER AND APPLICABLE RESOURCE AGENCIES WHICH DEMONSTRATES WHETHER OR NOT MITIGATION MEASURES SUCH AS NOISE WALLS ARE NECESSARY BETWEEN MARCH 1 AND AUGUST 15 AS FOLLOWS:
 - 1. IF THIS EVIDENCE INDICATES THE POTENTIAL IS HIGH FOR COASTAL CALIFORNIA GNATCATCHER TO BE PRESENT BASED ON HISTORICAL RECORDS OR SITE CONDITIONS, THEN CONDITION A.III SHALL BE ADHERED TO AS SPECIFIED ABOVE.
 - 2. IF THIS EVIDENCE CONCLUDES THAT NO IMPACTS TO THIS SPECIES ARE ANTICIPATED, NO MITIGATION MEASURES WOULD BE NECESSARY.