

INDIVIDUAL NOISE ASSESSMENT REPORT

Site Name/Facility:	<u>South Chollas Creek Channel</u>
Master Program Map No.:	<u>101</u>
Date:	<u>April 23, 2018</u>
Acoustician Name:	<u>Charles Terry</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 (Master Maintenance Program, MMP; City 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) for proposed routine maintenance activities within portions of the South Chollas Creek Channel Map 101 (Map 101) to comply with the MMP's Programmatic Environmental Impact Report (PEIR; City 2011b). Map numbers correspond to those contained in the MMP.

Project Location and Description:

The purpose of the project is to maintain the existing storm water facilities by restoring the original design capacity to provide public safety and protection of property. The City is proposing to maintain the South Chollas Creek Channel Map 101 through the removal of trash, debris, vegetation, and accumulated sediment.

South Chollas Creek Channel Map 101 is located in the Emerald Hills Community in the City of San Diego east of Interstate 805, west of State Route (SR) 125, and immediately south of SR 94 (Figure 1). The channel runs through a commercial area between Federal Boulevard and Winnett Street (Figures 2 and 3). The channel is located in un-sectioned lands on the National City U.S. Geological Survey (USGS) 7.5-minute quadrangle map (Figure 2).

The channel, staging area, and loading areas in Map 101 are zoned RS-1-7 (Residential-Single Unit) and CO-2-1 (Commercial Office). According to the Federal Emergency Management Agency, no portion of the channel is located within the 100-year floodway. Additionally, the FEMA Flood Insurance Rate Map (FIRM) for the project vicinity shows that the project is located within the Special Flood Hazard Areas Subject to Inundation by the 1% Annual Chance Flood as well as the 0.2% Annual Chance Flood areas. The channel is located within the Pueblo San Diego Hydrologic Unit and San Diego Bay Watershed Management Area. The site is not located but is adjacent to the MHPA which is located approximately 500 feet downstream to the west; however, no portion of the project is located within the Coastal Zone.

To facilitate the Individual Hydrology and Hydraulic Assessment (IHHA) prepared for the maintenance, Map 101 was subdivided into three reaches (Rick Engineering [RICK] 2017). Maintenance activities within Map 101 would occur within Reach 3 and portions of Reach 2. This INA evaluates Map 101, including staging and loading areas, where maintenance is currently proposed by the City of San Diego.

South Chollas Creek, Map 101, Reaches 2 and 3

The maintenance area of Map 101 runs approximately 1,420 feet southwest from Winnett Street to Federal Boulevard, bordering the southern side of State Route 94, flowing from east to west. It is composed of a trapezoidal channel with both earthen and concrete-lined bottom and both concrete and rip-rap-armored earthen banks. Reach 2 encompasses the downstream, earthen portion of the channel and is densely-vegetated with southern riparian forest. Reach 2 is approximately 600 feet long, however, the maintenance area includes only 50 feet at the upstream end of the reach lined by 2-ton rip-rap. Reach 2 has a top width of 28 feet, bottom width of 24 feet, and depth of 6 feet. Reach 3 is contiguous to the upstream extent of Reach 2, extending to the east. Reach 3 is concrete-lined and measures approximately 1,370 feet in length. Reach 3 has a top width of 28 feet, bottom width of 8 feet, and depth of approximately 5-9 feet. Map 101 receives storm flow from the channel upstream located in the City of Lemon Grove, adjacent slopes, and storm water infrastructure. The channel eventually flows to the west under Federal Boulevard.

Survey Methods and Date:

The IBA concluded that maintenance noise at the west end (Reach 2) of Map 101 could have an indirect impact on the breeding behavior of the Coastal California Gnatcatcher, an endangered bird, which has been observed in the Diegan coastal sage scrub within the MHPA located approximately 500 feet southwest of the west end of the proposed maintenance.

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A weighting (abbreviated “dBA”) used to approximate the hearing sensitivity of humans. Time averaged noise levels are expressed by the symbol “L_{EQ}” unless a different period is specified (with “L_{EQ}” implied to mean a period of one hour).

Ambient noise measurements were taken in the proposed maintenance area to establish baseline conditions. The following equipment was used to measure existing noise levels:

- Larson Davis System 831 Integrating Sound Level Meter
- Larson Davis Model CA250 Calibrator
- Windscreen and tripod for the sound level meter
- Digital camera

The sound level meter was field-calibrated immediately prior to the noise measurements to ensure accuracy. All sound level measurements conducted and presented in this report were made with a sound level meter that conforms to the American National Standards Institute specifications for sound level meters (ANSI S1.4-1983 R2001). All instruments were maintained with National Bureau of Standards traceable calibration per the manufacturers’ standards.

Meteorological conditions during the measurement period were overcast with low wind speeds, and conditions were appropriate for conducting ambient outdoor noise measurements. Air temperature at the measurement locations was approximately 66 °F, with 80 percent relative humidity (RH). Winds ranged from zero miles-per-hour to three miles-per-hour from the west.

The ambient noise levels were measured in two locations north of Federal Boulevard and south of SR 94, between 1:00 p.m. and 2:00 p.m. on May 10, 2017. These locations were immediately adjacent to the southern bank of the channel, and the locations gave an accurate ambient measurement at the edge of the MHPA area. The location of the measurements is illustrated on Figure 4.

**Table 1
AMBIENT NOISE LEVELS**

Location (Reach)	Sound Level (dBA L_{EQ})	Primary Noise Source
1	71.1	Traffic on SR-94 freeway with contribution from Federal Boulevard.
2	74.8	Traffic on SR-94 freeway with minor contribution from Federal Boulevard.

The measured roadway traffic noise levels were 71.1 and 74.8 dBA L_{EQ} (Table 1). The lower ambient noise level of 71.1 dBA L_{EQ} is used for this analysis.

Site Conditions:

Map 101 runs from east to west between Winnett Street and Federal Boulevard, bordering the southern side of SR 94. It is composed of a trapezoidal channel with both earthen and concrete-lined bottom and both concrete and rip-rap-armored earthen banks.

The City is proposing to maintain the South Chollas Creek Channel through the removal of trash, debris, vegetation, and accumulated sediment. To facilitate the Individual Hydrology and Hydraulic Assessment (IHHA) prepared for the maintenance, Map 101 was divided into three reaches (RICK 2017a).

The proposed area of maintenance for Map 101 is Reach 3 and a portion of Reach 2. Reach 1 is located in an unmapped area and was not analyzed for maintenance but was still included in the IHHA for the downstream boundary condition in the IHHA (RICK 2017a). Within Map 101, equipment and trucks for the maintenance activities will be staged at the existing earthen access easements at 2870-3648 and 6062 Federal Boulevard. Additional access may be required through private property at 6144 Federal Blvd.

Are there sensitive wildlife species within 750 feet of proposed maintenance?

Yes ☒ No ☐

If not, no further assessment of noise impacts from maintenance is required.

If yes, the rest of this form must be completed.

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.

According to the IBA (HELIX 2018), suitable habitat for the Coastal California Gnatcatcher (CAGN; federally threatened, CDFW species of special concern) exists within 750 feet of the maintenance proposed in Map 101. CAGN has been historically reported within the MHPA to the southwest of Map 101 as recently as 2015. Diegan coastal sage scrub immediately surrounding the maintenance area in Map 101 is not within the MHPA and is not part of this analysis since noise control is only required in the MHPA. The maintenance area and disturbed Diegan coastal sage scrub are located immediately adjacent to SR 94 and commercial development. The CAGN could be indirectly impacted by maintenance if work is conducted during the breeding season.

MAINTENANCE IMPACTS

List the equipment to be used during maintenance and anticipated noise levels associated with each. Calculate the combined maximum hourly noise level associated with simultaneous operation of equipment during maintenance. Estimate the distance to the 60 dBA L_{EQ} including existing ambient noise sources affecting the maintenance area.

Maintenance Methodology

An Individual Maintenance Plan (IMP; RICK 2017b) was prepared for the proposed maintenance in accordance with the MMP. The IMP identifies the limits of maintenance and describes the methodology to be used within Map 101. Maintenance in Map 101 is expected to remove up to 15,400 cubic yards of material over a 6-day period in order to restore the original capacity of the channel to convey storm water. The maintenance area includes 1,370 linear feet of concrete bottom and 298 linear feet of earthen bottom channel. Equipment involved in the maintenance will include a gradall, front-end loader, track steer, excavator, and dump truck. Diversion pumps will be placed at the upstream and downstream ends of the maintenance area. Water will be pumped around the maintenance area in a pipe and discharged downstream of the maintenance area. Equipment and trucks for the maintenance activities will be staged at the existing earthen access easements at 2870-3648 and 6062 Federal Boulevard. Additional proposed access area may be required through private property at 6144 Federal Boulevard. Access in and out of the channel will be from these same locations.

A small track steer will enter the channel at access and loading area at east end of the maintenance area (6184 Federal Boulevard). The track steer will push vegetation and sediment to the excavator and front-end loader stationed at the edge of the channel within the loading area. An excavator or Gradall will transfer the material to a dump truck for disposal at an authorized disposal site. Street sweepers will sweep adjacent public rights-of-way and immediate truck loading sites nightly. Upon completion of the maintenance, any sandbags placed will be removed and the equipment will be transported back to the City yard.

Based on the proposed maintenance equipment and operational features, the noise levels associated with the maintenance are estimated in Table 2. For purposes of this analysis, the expected noise levels produced by maintenance equipment are based on data obtained from previous noise measurements taken at other similar operations and construction noise levels estimated by the Federal Highway Administration (FHWA) Construction Noise Handbook (FHWA 2006a). This analytical method provides a known basis for determining noise levels associated with channel maintenance. The noise levels are based on dBA, L_{max} at 50 feet. Acoustical usage factors (% of an hour) are based on FHWA Road Construction Noise Model User's Guide Table 1 (FHWA 2006b).

Table 2 EQUIPMENT NOISE LEVELS		
Equipment	Noise Level at 50 feet (dBA, L_{max})	Percentage Operation During Average Hour (%)
Dump Truck	76	40
Gradall	72.5	40
Front-end Loader	78	40
Track Steer	68	50
Diversion Pump	77	100
Excavator	80.7	40

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.

Channel Maintenance Activity

In order to estimate the potential impact of maintenance on the CAGN, this analysis assumed that a track steer would be operating at the westernmost edge of the maintenance area of Map 101, which is approximately 500 feet from CAGN habitat located within MHPA. This analysis also assumed the combined use of all equipment operating simultaneously (gradall, dump truck, track steer, excavator, front-end loader, and single diversion pump) at the access and staging area approximately 1,400 feet from the MHPA.

The noise model calculated the aggregate noise level (i.e., the logarithmic sum of the equipment noise sources) along with the estimated percentage of operation within a one-hour period. The estimate was then adjusted to the actual distance from the 50-foot reference distance to account for geometric divergence of 6 dBA per doubling of distance.

Based on the noise model, the combined noise from all of the equipment operating simultaneously at the access and staging area would be 52.8 dBA L_{EQ} . Thus, without factoring in ambient noise, the 60 dBA L_{EQ} contour would extend a distance of 610 feet from the location from which the combined equipment would operate. The combined noise level from a single-track steer operating at the westernmost edge of the maintenance area would be 53.6 dBA L_{EQ} . Based on this, the 60 dBA L_{EQ} contour would not extend into the MHPA. Furthermore, the topography and intervening buildings would attenuate construction noise at the nearby MHPA. Also, as noted earlier, the site is located within an area where ambient traffic noise is expected to be 71.1 dBA L_{EQ} .

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

Yes ☐ No ☒

If yes, identify the wildlife species and discuss their sensitivity to maintenance noise.

Attach documentation supporting the determination of the presence or absence of listed animal species with a moderate or high potential to occur (e.g. California Natural Diversity Database records searches).

Other than the CAGN, no sensitive species have been reported within the work areas during previous surveys; therefore, the potential for state and federally listed sensitive species (other than the CAGN) to occur within the work areas is considered low. Figure 5a and 5b depict CNDDDB, USFWS, and SanBIOS database records within one mile of the project sites.

MITIGATION

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

Based on the conclusion that the noise from maintenance would not substantially increase noise levels over the current ambient noise levels (71.1 dBA L_{EQ}), no mitigation measures are required. Also, the 60 dBA L_{EQ} contour would extend a distance of 610 feet from the location from which the combined equipment would operate and not extend into the MHPA located 500 feet from the western edge of Reach 2.

In addition, the following protocols from the MMP would serve to reduce impacts to sensitive birds near the maintenance activities.

Based on the conclusion that the noise from maintenance would not substantially increase noise levels over the current ambient noise levels, implementation of specific MMP protocols designed to protect sensitive bird species is not necessary.

ADDITIONAL COMMENTS OR RECOMMENDATIONS

Although the focus of the INA is on potential indirect noise impacts to wildlife, it is noted that noise impacts on human receptors are controlled by the Noise Control Ordinance of the San Diego Municipal Code. Per section 59.5.0404, maintenance activity is limited to between the hours of 7:00 am and 7:00 pm. During this time, maintenance noise may not exceed a level of 75 dBA L_{EQ} when averaged over this 12-hour period. Further, the Code limits construction to Monday through Saturday. Maintenance may occur on Sundays by obtaining a permit from the City's Noise Abatement and Control Administrator.

The proposed maintenance is anticipated to comply with the Noise Control Ordinance. Thus, no noise impacts on sensitive uses (e.g., residential development) would occur from operation of equipment in the course of maintenance.

Figures:

Figure 1: Regional Location Map

Figure 2: Project Vicinity Map (Aerial Photograph)

Figure 3: Project Vicinity Map (USGS Topography)

Figure 4: Project Site Detail and Ambient Noise Measurements

Figure 5: Sensitive Species within One-Mile Radius

References:

City of San Diego. 2011a *Master Storm Water System Maintenance Program*, October 4.

2011b *Final Recirculated Environmental Impact Report, Master Storm Water System Maintenance Plan*, October 4.

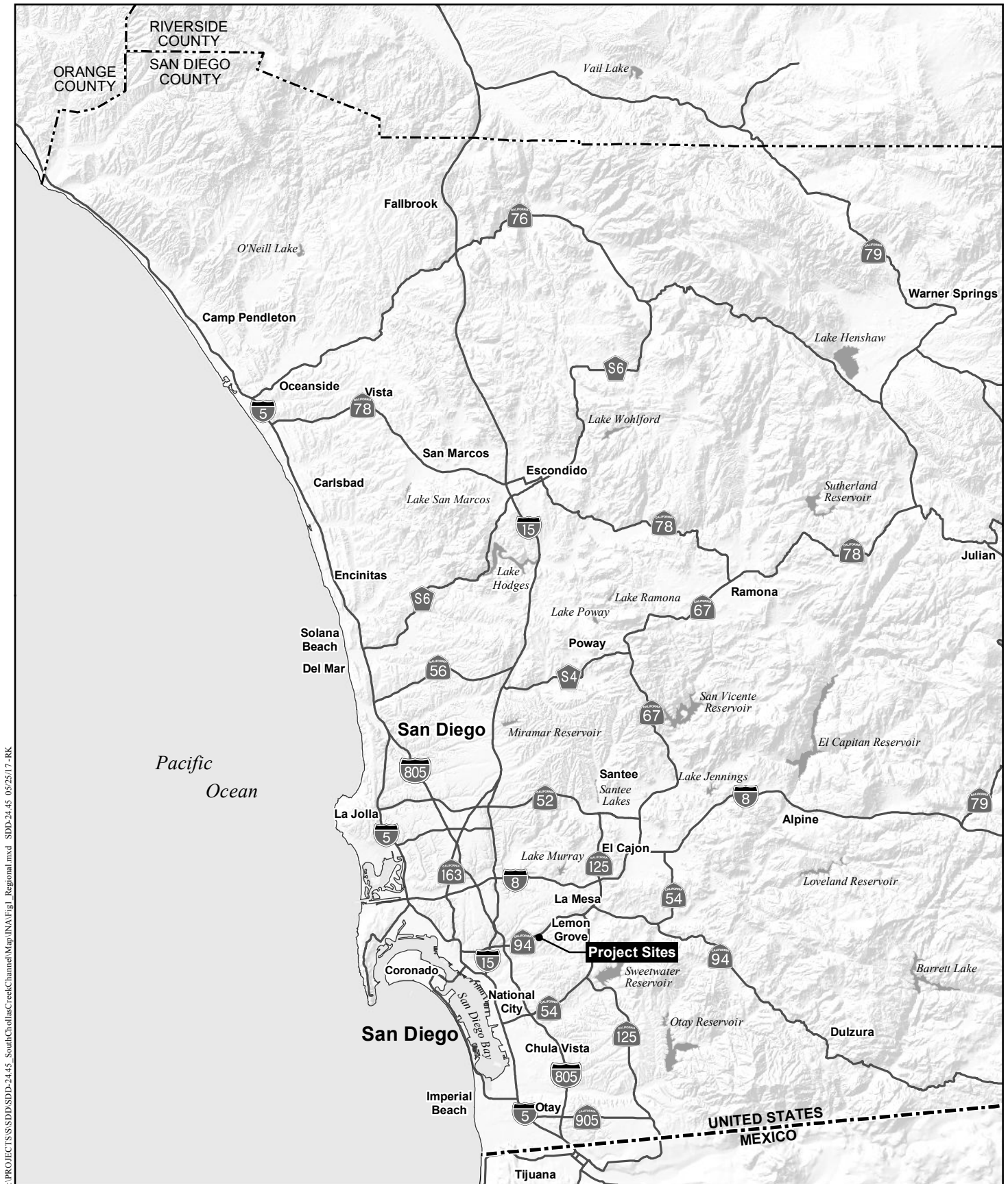
Federal Highway Administration (FHWA). 2006a *Construction Noise Handbook*. August.

2006b *Roadway Construction Noise Manual User's Guide*. January.

HELIX Environmental Planning (HELIX). 2018. Draft Individual Biological Assessment Report, South Chollas Creek Channel – Map 101. February 2018.

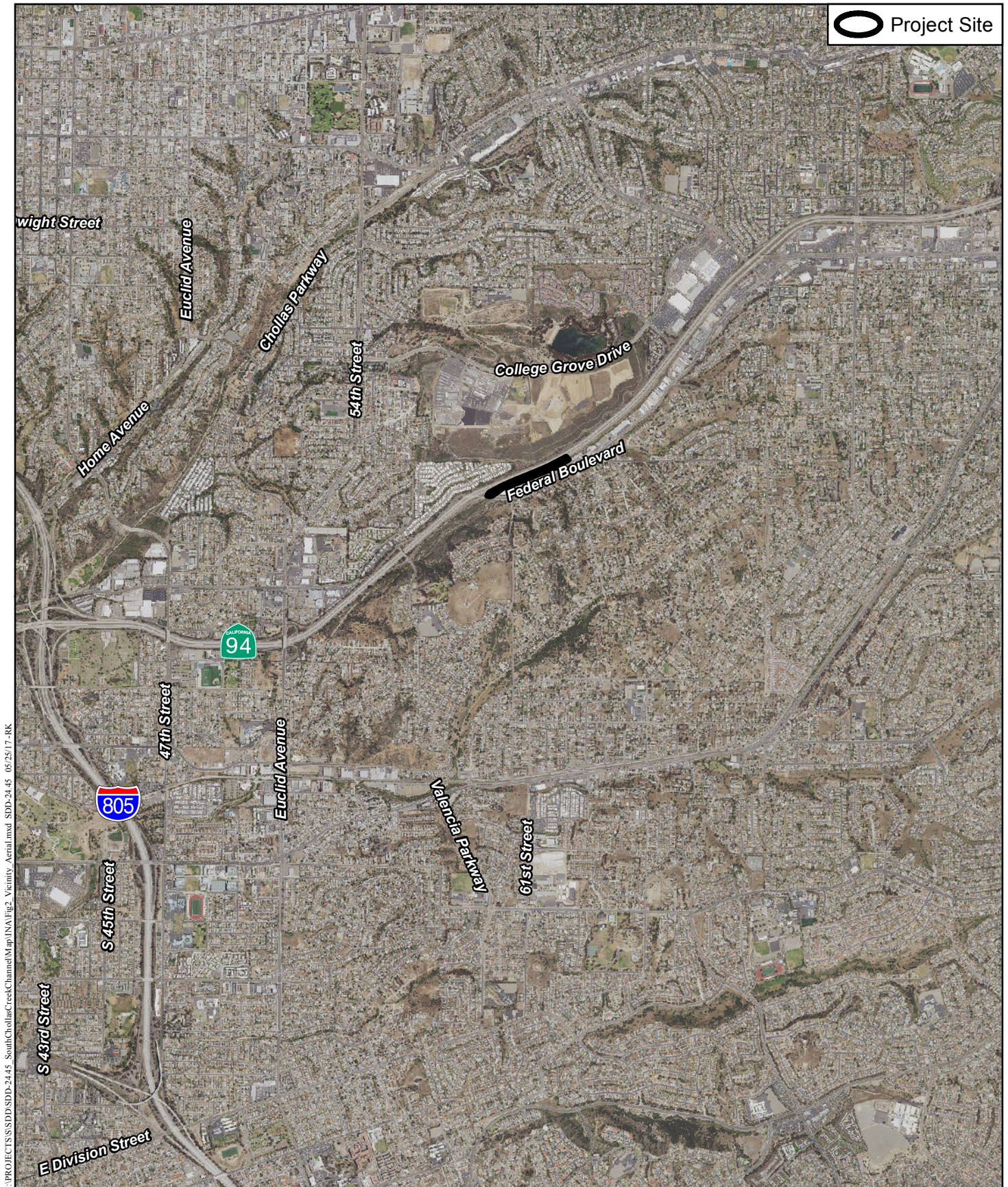
Rick Engineering (RICK). 2017a *Individual Hydrologic & Hydraulic Assessment (IHHA) Report for South Chollas Creek Channel (Map 101)*. January 30.

2017b *Individual Maintenance Plan South Chollas Creek MMP Map #101*. May 17.



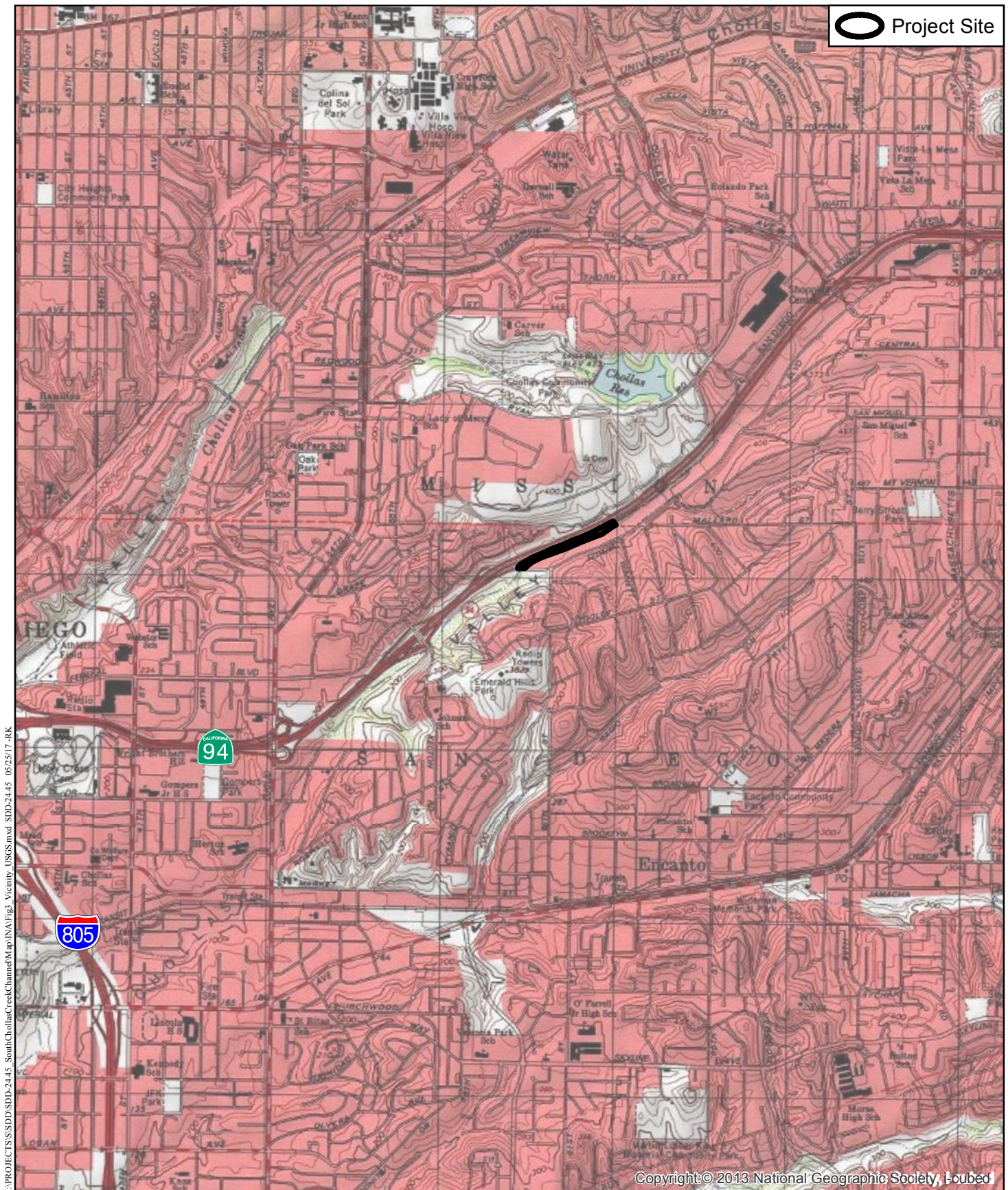
Regional Location

SOUTH CHOLLAS CREEK CHANNEL INDIVIDUAL NOISE ASSESSMENT



Project Vicinity Map (Aerial Photograph)

SOUTH CHOLLAS CREEK CHANNEL INDIVIDUAL NOISE ASSESSMENT



Project Vicinity Map (USGS Topography)

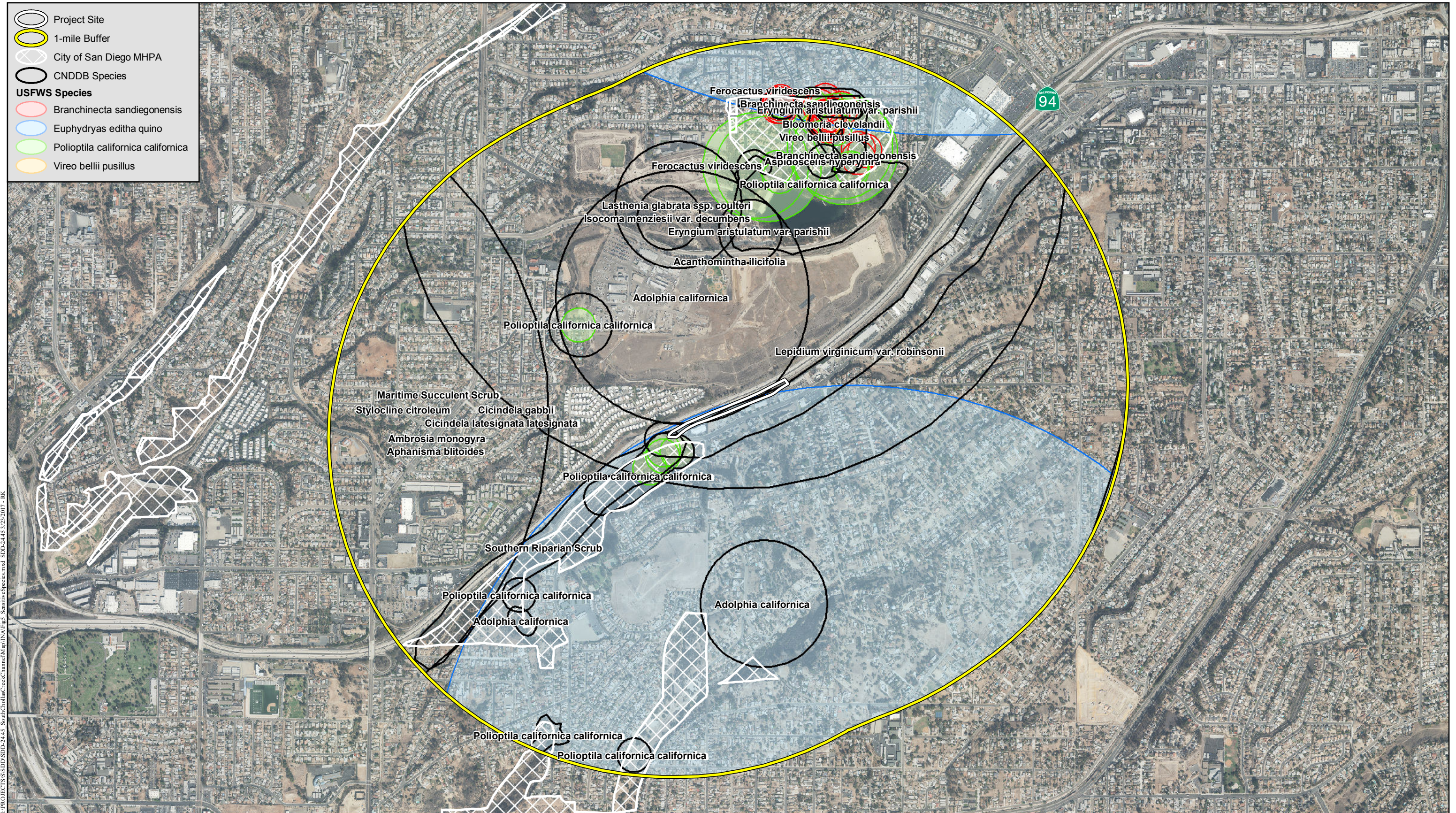
SOUTH CHOLLAS CREEK CHANNEL INDIVIDUAL NOISE ASSESSMENT



Project Site Detail and Ambient Noise Measurements, South Chollas Creek Channel – Map 101

SOUTH CHOLLAS CREEK CHANNEL INDIVIDUAL NOISE ASSESSMENT

Figure 4



**Sensitive Species Occurrences within One-Mile of Project Location,
South Chollas Creek Channel – Map 101**