3.11 Noise

This section describes the environmental and regulatory settings and draft significance criteria with respect to noise.

3.11.1 Environmental Setting

This subsection describes the environmental setting for noise. For the purposes of describing existing ambient noise conditions, this section also provides a brief overview of acoustics and vibration. For the purpose of this analysis, "study area" refers to the land beneath the proposed project components (i.e., temporary workspace, permanent right-of-way [ROW], and aboveground facilities). This section also provides the results of background research and field studies along the proposed project temporary workspace and permanent ROW.

3.11.1.1 Noise

Noise is defined as unwanted and objectionable sound. Noise is measured in terms of sound-pressure level, using units called decibels (dB). The most common system used by regulatory bodies, like the U.S. Environmental Protection Agency and the Occupational Safety and Health Administration (OSHA), for noise measurement is the A-weighted decibel (dBA) scale, which measures sound as an approximation of how a person perceives or hears sound. Since the range of intensities that the human ear can detect is large, the scale is based in multiples of 10, the logarithmic scale. Each interval of 10 dB indicates a sound energy 10 times greater, which is perceived by the human ear as being roughly twice as loud. Table 3.11-1 contains definitions of acoustical terms used in this section (EPA 1978).

Table 3.11-1 Definitions of Acoustical Terms

Concept	Term	Definition
Understanding Sound	Sound	Result of a source inducing vibration in the air, which causes a fluctuation in normal atmospheric pressure (i.e., a sound wave).
	Amplitude	Size of the vibration; perceived as loudness.
	Sound Pressure	Amplitude or measure of the difference between atmospheric pressure (with no sound present) and the total pressure (with sound present).
	Decibel (dB)	Unit of sound pressure. The decibel scale is based on multiples of 10. Each interval of 10 decibels is perceived by the human ear as twice as loud.
	Frequency	Speed of vibration; perceived as pitch.
	Time Pattern	Temporal nature of sound described in terms of its pattern of time and level: continuity, fluctuation, impulsiveness, and intermittency.

Table 3.11-1 Definitions of Acoustical Terms

Concept	Term	Definition
Sound Descriptors	A-weighted Sound Level	Most common method for weighting the frequency spectrum to mimic the human ear. Measured in A-weighted decibels (dBA).
	Sound Exposure Level	Total energy of a sound with varying levels from moment to moment. Sums the intensity during the exposure duration.
	Equivalent Sound Pressure Level (Leq)	A single value of sound level for any desired duration, which includes all of the time-varying sound energy in the measurement period.
	Day-Night Average Sound Level (Ldn)	A-weighted equivalent sound level for a 24-hour period with an additional 10 dB weighting imposed on the equivalent sound levels occurring during nighttime hours (10 p.m. to 7 a.m.).
	Community Noise Level Equivalent (CNEL)	A-weighted equivalent sound level for a 24-hour period with an additional 5 dB weighting imposed on the equivalent sound levels occurring evening hours (7 p.m. to 10 p.m.) and 10 dB for nighttime hours (10 p.m. to 7 a.m.). CNEL is specific to the state of California.
	Maximum Level (Lmax)	Highest sound level that occurs during a single event in which the sound level varies with time.
Understanding Noise	Noise	Unwanted sound.
	Ambient Noise	Encompassing noise from multiple sources at a given location.
	Sensitive Receptors	Locations where noise could interfere with human activities.

Source: EPA 1978; State of California 2017.

Ambient noise levels in communities usually relate to the presence and intensity of nearby human activity. While the ambient day-night average sound level (Ldn) in a wilderness area can be below 35 dBA, the Ldn in an urban housing area on a major avenue is usually around 68 dBA. Noise levels are considered low below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. (EPA 1978)

The general human response to changes in noise levels that are similar in frequency content (e.g., increases in continuous equivalent sound pressure level [Leq] traffic noise levels) are summarized as follows:

- A 3-dB change in sound level is considered a barely noticeable difference.
- A 5-dB change in sound level is typically noticeable.
- A 10-dB change is considered to be a doubling in loudness.

Ambient Noise Sources in the Study Area

The study area includes all project components that would cross the County of San Diego, the City of San Diego, the City of Escondido, and the City of Poway:

- **County of San Diego:** characterized as a predominantly rural environment with low-density development. Major sources of noise in the county include transportation-related activities, and non-transportation actives, including industrial processing, mechanical equipment and pumping stations. (County of San Diego 2011a)
- **City of San Diego:** characterized as a developed and urbanized city. Motor vehicle traffic on interstate freeways, state highways, and local major roads is the most prevalent noise source. Other contributors to the city's noise environment are aircraft noise, rail traffic, and industrial and commercial activities. (City of San Diego 2015)

- **City of Escondido:** characterized by primarily single and multifamily residential uses. The city's existing noise environment is dominated by traffic-related noise along the city's roadway network, including Interstate (I-) 15 and State Highway 78. (City of Escondido 2012)
- **City of Poway:** characterized as a once rural suburb of San Diego. Motor vehicle traffic on city roadways is the most prevalent source of continuous noise in the city. For residential areas adjacent to commercial and industrial uses, intermittent mechanical noise also contribute to the noise environment. (City of Poway 1991)

Long-term noise monitoring was conducted to describe the current, hourly ambient noise levels in three locations that are representative of the County of San Diego, City of San Diego, and City of Escondido within the study area:

- **San Diego Gas & Electric Company (SDG&E) Rainbow Facility (June 2, 2015 to June 4, 2015):** The noise monitor at the existing Rainbow Metering Station was placed approximately 110 feet from the Rainbow Valley Boulevard centerline and approximately 185 feet from the Old Highway 395 centerline, at the nearest residential property line, to the south of the proposed SDG&E equipment. Ambient hourly noise levels ranged from 48.6 dBA Leq to 64.4 dBA Leq. Table 3.11-2 lists hourly results of the monitoring. (Eilar Associates, Inc. 2015)
- **Lake Hodges Facility (June 2, 2015 to June 4, 2015):** The noise monitor at the Lake Hodges site was placed approximately 265 feet from the Bear Valley Parkway centerline and approximately 295 feet from the Beethoven Drive centerline. Ambient hourly noise levels ranged from 38.6 dBA Leq to 56.5 dBA Leq. Table 3.11-2 lists hourly results of the monitoring. (Eilar Associates, Inc. 2015)
- **Proposed Site of Mainline Valve (MLV) 6[1] in the City of Escondido (September 12, 2017 to September 13, 2017):** The noise monitor was placed approximately 58 feet northeast of the Centre City Parkway centerline and approximately 86 feet northwest of the West Fifth Avenue centerline. Ambient hourly noise levels ranged from 50.6 dBA Leq to 67.6 dBA Leq. Table 3.11-3 lists hourly results of the monitoring. (Eilar Associates, Inc. 2017)

Table 3.11-2 Measured Hourly Equivalent Sound Pressure Levels from Monitoring at the Rainbow and Lake Hodges Facilities

Date	Hour Beginning	Hourly Equivalent Sound Pressure Level (dBA Leq)	
		Rainbow Site	Lake Hodges Site
June 2, 2015	6:00 p.m.	-	54.6
	7:00 p.m.	58.2	54.6
	8:00 p.m.	55.7	52.9
	9:00 p.m.	54.9	52.1
	10:00 p.m.	53.4	50.4
	11:00 p.m.	53.6	49.9

[1] MLV 6 is the location of a blowdown stack location. The Rainbow Pressure-Limiting Station would consist of equipment that reduces or shuts off the supply of gas flowing into the pipeline system if necessary to prevent over-pressurizing. This allows the pipeline to be rapidly depressurized, a process known as "blowdown," from within the Pressure-Limiting Station, to facilitate maintenance or in the event of an emergency. A blowdown is accomplished by opening a valve and allowing the gas to escape well above ground level to the atmosphere through a vertical pipe, or "stack," which would protrude aboveground within the station.

Table 3.11-2 Measured Hourly Equivalent Sound Pressure Levels from Monitoring at the Rainbow and Lake Hodges Facilities

Date	Hour Beginning	Hourly Equivalent Sound Pressure Level (dBA Leq)	
		Rainbow Site	Lake Hodges Site
June 3, 2015	12:00 a.m.	54.3	45.2
	1:00 a.m.	50.7	38.9
	2:00 a.m.	48.6	38.6
	3:00 a.m.	54.9	40.3
	4:00 a.m.	55.5	45.5
	5:00 a.m.	58.2	53.3
	6:00 a.m.	58.8	51.2
	7:00 a.m.	64.1	50.3
	8:00 a.m.	58.4	51.3
	9:00 a.m.	58.4	49.8
	10:00 a.m.	64.4	50.2
	11:00 a.m.	60.1	50.6
	12:00 p.m.	63.1	51.1
	1:00 p.m.	59.3	52.8
	2:00 p.m.	59.5	53.5
	3:00 p.m.	61.4	55.1
	4:00 p.m.	62.2	56.5
	5:00 p.m.	59.9	54.8
	6:00 p.m.	60.1	54.6
	7:00 p.m.	58.8	54.6
	8:00 p.m.	59.0	52.4
	9:00 p.m.	56.7	49.9
	10:00 p.m.	55.7	48.5
	11:00 p.m.	54.5	46.6
June 4, 2015	12:00 a.m.	52.2	44.4
	1:00 a.m.	52.4	42.3
	2:00 a.m.	52.3	41.3
	3:00 a.m.	53.7	43.1
	4:00 a.m.	56.4	43.2
	5:00 a.m.	59.7	47.8
	6:00 a.m.	60.1	54.3
	7:00 a.m.	59.0	-

Source: Eilar Associates, Inc. 2015.
Note:
Noise monitoring at the Rainbow Site began at 7:00 p.m. on June 2, 2015 and ended at 7:00 a.m. on June 4, 2015. Noise monitoring at the Lake Hodges Site began at 6:00 p.m. on June 2, 2015, and ended at 6:00 a.m. on June 4, 2015.
Key:
- = No data available
dBA = A-weighted decibel
Leq = equivalent sound pressure level

Table 3.11-3 Measured Hourly Equivalent Sound Pressure Levels from Monitoring at the Proposed Mainline Valve 6 Site

Date	Hour Beginning	Hourly Equivalent Sound Pressure Level (dBA Leq)
September 12, 2017	10:00 a.m.	65.1
	11:00 a.m.	64.0
	12:00 p.m.	64.0
	1:00 p.m.	65.0
	2:00 p.m.	64.2
	3:00 p.m.	66.1
	4:00 p.m.	65.8
	5:00 p.m.	67.6
	6:00 p.m.	66.6
	7:00 p.m.	63.4
	8:00 p.m.	63.5
	9:00 p.m.	60.1
	10:00 p.m.	60.2
	11:00 p.m.	54.3
September 13, 2017	12:00 a.m.	53.6
	1:00 a.m.	51.6
	2:00 a.m.	50.6
	3:00 a.m.	52.8
	4:00 a.m.	54.7
	5:00 a.m.	61.8
	6:00 a.m.	64.7
	7:00 a.m.	67.0
	8:00 a.m.	65.3
	9:00 a.m.	65.3
	10:00 a.m.	63.4
	11:00 a.m.	65.5
	12:00 p.m.	63.8

Source: Eilar Associates, Inc. 2017.
Key:
dBA = A-weighted decibel
Leq = equivalent sound pressure level

3.11.1.2 Vibration

Another community annoyance related to noise is vibration, which, as with noise, can be described by both amplitude and frequency. Vibration can be felt outdoors, but the perceived intensity of vibration impacts is much greater indoors, due to the shaking of structures. Factors that influence levels of ground-borne vibration and noise are the vibration source, soil conditions (type, rock layers, soil layering, and depth of water table), and factors related to the vibration receiver (foundation type, building construction, and acoustical absorption). Table 3.11-4 contains definitions of vibration terms used in this section.

Table 3.11-4 Definitions of Vibration Terms

Concept	Term	Definition
Understanding Vibration	Vibration	Oscillatory motion that can result in perceptible movement of building floors, rattling of windows, and shaking of items on shelves or hanging on walls.
	Amplitude	Size of the vibration.
	Frequency	Speed of vibration.
Vibration Descriptors	Peak Particle Velocity	The maximum instantaneous positive or negative peak of the vibration signal.
	Vibration Velocity Level (VdB)	Measures human response to vibration in decibels. Referred to as VdB to reduce the potential of confusion with sound decibels.

Source: FTA 2006.

Human response to vibration is difficult to quantify because vibration can be perceived at levels below those required to produce any damage to structures. Human response to vibration is usually assessed using vibration velocity level (VdB). Typical background vibration from common sources, like roads, in a residential area is 50 VdB. 15 VdB is below the human threshold of perception (FTA 2006). Table 3.11-5 shows common human and structural responses to vibration levels.

Table 3.11-5 Human and Structural Responses to Typical Levels of Vibration

Vibration Velocity Level	Typical Sources	Human/Structural Response
100	Blasting from construction projects	Difficulty with tasks, threshold, minor cosmetic damage to fragile buildings
90	Bulldozers and other heavy tracked construction equipment	Difficulty with tasks (e.g., reading a screen)
80	Commuter rail, upper range	Residential annoyance, transient events
70	Rapid transit, typical	Residential annoyance, continuous events
65	Bus or truck, typical	Human threshold of perception and limit for vibration sensitive equipment
50	Typical background vibration	No human response

Source: FTA 2006.

3.11.1.3 Sensitive Receptors

Noise- and vibration-sensitive receptors include residences, hospitals, religious congregations, schools and libraries, nature and wildlife preserves, and parks. In addition to these land uses, research laboratories are also sensitive to groundborne vibration. For the purposes of this environmental setting, the description of sensitive receptors is provided in two levels of detail: (i) sensitive receptors located within 500 feet of the study area, which provide a representative list of receptors in the study area; and (ii) sensitive receptors located within a reference distance of 50 feet from the study area, which would have the potential to be exposed to higher levels of project-related noise. Within 50 feet of the study area, 44 residences were identified in the city of Escondido, 31 residences were identified in the city of Poway, 48 residences were identified in the city of San Diego, and 11 residences were identified in unincorporated San Diego County. Table 3.11-6 lists non-residential sensitive receptors within 500 feet of the study area. Figure 3.11-1 shows sensitive receptors near the proposed project.

Table 3.11-6 Sensitive Receptors (Non-Residential) within 500 Feet of the Study Area

Name	Type	Jurisdiction	Distance to Nearest Temporary Workspace (feet)	Project Component (MP)
Pala Mesa Resort Golf Course	Golf Course	San Diego	153	6.5
Rainbow Municipal Water District Open Space	Park and Recreation Area	San Diego	188	8.7
All Seasons RV Park and Campground	Park and Recreation Area	San Diego	1	14.0
Reidy Canyon Creek	Park and Recreation Area	Escondido	0	23.2
James A Stone Municipal Swimming Pool	Park and Recreation Area	Escondido	342	24.2
Escondido Creek	Park and Recreation Area	Escondido	0	24.4
Classical Academy Online	School	Escondido	214	24.5
Seventh Day Adventist Church	Church	Escondido	439	24.8
Kingdom Hall of Jehovah's Witnesses	Church	Escondido	222	25.5
Escondido City Park	Park and Recreation Area	Escondido	8	26.0
Westminster Presbyterian Church	Church	Escondido	59	26.4
Classical Academy Elementary School	School	Escondido	165	28.4
Bear Valley Middle	School	Escondido	190	28.4
San Pasqual High	School	Escondido	327	29.0
Kit Carson Park	Park and Recreation Area	Escondido	0	29.0
The Vineyard at Escondido Golf Course	Park and Recreation Area	Escondido	0	29.1
San Dieguito River Park	Park and Recreation Area	San Diego	0	30.0
Battle Mountain Open Space	Park and Recreation Area	San Diego	0	31.0
Bernardo Vista Del Lago	Conservation Easement	San Diego	0	31.0
Rancho Bernardo Community Presbyterian Church	Church	San Diego	3	33.1
Saint Bartholomew's Episcopal Church	Church	San Diego	21	34.0
Pomerado Christian Church	Church	Poway	403	34.3
Saint Michael's Catholic Church of Poway	Church	Poway	9	34.9
St. Michael's School	School	Poway	140	35.0

Table 3.11-6 Sensitive Receptors (Non-Residential) within 500 Feet of the Study Area

Name	Type	Jurisdiction	Distance to Nearest Temporary Workspace (feet)	Project Component (MP)
Abolitos Park	Park and Recreation Area	Poway	335	35.6
Adobe Ridge Neighborhood Park	Park and Recreation Area	Poway	135	36.0
Arbolitos Mini Park	Park and Recreation Area	Poway	0	36.2
Arbolitos Sports Field	Park and Recreation Area	Poway	0	36.2
Pomerado Creek	Conservation Easement	Poway	31	36.2
Abraxas Continuation High	School	Poway	461	36.5
Family Life Christian Fellowship Church	Church	Poway	52	37.5
Pomerado Elementary	School	Poway	356	37.6
Poway Tabernacle (historical)	Church	Poway	4	38.1
Kiddies Korner	School	Poway	301	38.2
Land Pres/Mitigation Bank - The Environmental Trust	Park and Recreation Area	Poway	0	38.3
Poway Oaks Neighborhood Park	Park and Recreation Area	Poway	0	38.3
The Pond	Park and Recreation Area	Poway	439	38.6
City of Poway Easement	Conservation Easement	Poway	439	38.6
Bette Bendixen Park	Park and Recreation Area	Poway	415	38.7
Poway holding 35	Park and Recreation Area	Poway	0	38.8
Poway holding 3	Park and Recreation Area	Poway	107	38.8
South Poway Cornerstone	Park and Recreation Area	Poway	0	39.0
Poway holding 24	Park and Recreation Area	Poway	0	39.0
Poway holding 34	Park and Recreation Area	Poway	276	39.2
Poway holding 11	Park and Recreation Area	Poway	98	39.3
Poway holding 27	Park and Recreation Area	Poway	418	39.4

Table 3.11-6 Sensitive Receptors (Non-Residential) within 500 Feet of the Study Area

Name	Type	Jurisdiction	Distance to Nearest Temporary Workspace (feet)	Project Component (MP)
Discovery Isle Child Development Center	School	Poway	96	39.5
West Sycamore Canyon	Conservation Easement	San Diego	0	39.7
Scripps-Miramar Ranch Open Space	Park and Recreation Area	San Diego	0	40.0
Zhu Jin Trust 03-20-97	Conservation Easement	San Diego	0	40.0
Stonebridge Estates Homeowners Association	Conservation Easement	San Diego	0	40.4
Marshall Middle	School	San Diego	301	43.7
Elliot Preserve	Conservation Easement	San Diego	0	44.0
International University Open Space	Conservation Easement	San Diego	0	44.5
Montiel Park	Park and Recreation Area	San Marcos	64	Staging Area/Laydown Yard #6D - Montiel
City Of San Marcos	Conservation Easement	San Marcos	64	Staging Area/Laydown Yard #6D - Montiel
Walker Elementary	School	San Diego	276	Mira Mesa Pipeline Extension
Walker-Wangenheim School Park	Park and Recreation Area	San Diego	534	Mira Mesa Pipeline Extension
Hourglass Community Park	Park and Recreation Area	San Diego	790	Mira Mesa Pipeline Extension
Los Penasquitos Canyon Preserve	Park and Recreation Area	San Diego	0	Removal of Existing Regulator Station 1248
Ridgewood Neighborhood Park	Park and Recreation Area	San Diego	298	Removal of Existing Regulator Station 1248

Source: ESRI 2012, 2018; GreenInfo 2016a, 2016b; SanGIS 2006, 2016a, 2016b; SDG&E 2017; U.S. Census 2010.
Key:
MP = Milepost

3.11.2 Regulatory Setting

This subsection summarizes federal, state, and local laws; regulations; and standards that govern noise.

3.11.2.1 Federal

Federal Transit Administration

Although there are no federal regulations applicable to the proposed project related to noise, the Federal Transit Administration's (FTA's) Transit Noise and Vibration Impact Assessment manual provides

guidelines for construction noise and vibration thresholds that can be used as a reference for analyzing noise impacts along roadways. The guidance threshold for daytime construction noise impacts in outdoor areas is 90 dBA Leq. The guidance threshold for construction vibration damage to non-engineered timber and masonry buildings is 0.2 inch/second peak particle velocity (PPV). The threshold for human annoyance (i.e., distinctly perceptible vs. barely perceptible) for groundborne vibration is 75 VdB. (FTA 2006)

Occupational Health and Safety Administration

OSHA's hearing conservation program requires employers to monitor noise exposure levels to accurately identify employees exposed to noise at or above 85 dB averaged over eight working hours. Workers must be provided hearing protectors if they are exposed to eight-hour time-weighted average noise levels of 85 dB and above. (OSHA 2002)

3.11.2.2 State

California Noise Control Act

Sections 46000 to 46080 of the California Health and Safety Code (i.e., the California Noise Control Act) declare excessive noise to be serious hazard to the public health and welfare and acknowledge the continuous and "increasing bombardment" of noise in the urban, suburban, and rural areas. Furthermore, the California Noise Control Act requires the state to provide an environment for all Californians free from noise that jeopardizes their health or welfare by protecting citizens' health and welfare through the control, prevention, and abatement of noise.

California Government Code Section 65302

No statewide regulations address noise impacts from construction or land uses; however, California Government Code Section 65302(f) requires local governments to perform noise surveys and implement a noise element as part of the General Plan. In addition, the state recommends interior and exterior noise standards by land use category and standards for the compatibility of various land uses and noise levels.

3.11.2.3 Regional and Local

County of San Diego

<u>County of San Diego General Plan</u>

In the county of San Diego, noise exposure criteria are incorporated in the County of San Diego General Plan to reduce future conflicts between noise and land use. The county's Noise Compatibility Guidelines indicate a range of compatibility, and are intended to be flexible enough to apply to many projects and environments. The following goals and policies are outlined in the Noise Element and are relevant to the proposed project. (County of San Diego 2011a)

- ***Goal N-2 Protection of Noise Sensitive Uses.*** *A noise environment that minimizes exposure of noise sensitive land uses to excessive, unsafe, or otherwise disruptive noise levels.*
  - *Policy N-2.1 Development Impacts to Noise Sensitive Land Uses. Require an acoustical study to identify inappropriate noise level where development may directly result in any existing or future noise sensitive land uses being subject to noise levels equal to or greater than 60 CNEL [community noise level equivalent] and require mitigation for sensitive uses in compliance with the noise standards listed in Table N-2.*
- ***Goal N-3 Groundborne Vibration.*** *An environment that minimizes exposure of sensitive land uses to the harmful effects of excessive groundborne vibration.*

  - *Policy N-3.1 Groundborne Vibration. Use the Federal Transit Administration and Federal Railroad Administration guidelines, where appropriate, to limit the extent of exposure that sensitive uses may have to groundborne vibration from trains, construction equipment, and other sources.*

- ***Goal N-4 Transportation Related Noise Generators.*** *A noise environment that reduces noise generated from traffic, railroads, and airports to the extent feasible.*
  - *Policy N-4.2 Traffic Calming. Include traffic calming design, traffic control measures, and low-noise pavement surfaces that minimize motor vehicle traffic noise in development that may impact noise sensitive land uses.*

- ***Goal N-6 Temporary and/or Nuisance Noise.*** *Minimal effects of intermittent, short-term, or other nuisance noise sources to noise sensitive land uses.*
  - *Policy N-6.2 Recurring Intermittent Noise. Minimize impacts from noise in areas where recurring intermittent noise may not exceed the noise standards listed in Table N-2, but can have other adverse effects.*
  - *Policy N-6.3 High-Noise Equipment. Require development to limit the frequency of use of motorized landscaping equipment, parking lot sweepers, and other high-noise equipment if their activity will result in noise that affects residential zones.*
  - *Policy N-6.4 Hours of Construction. Require development to limit the hours of operation as appropriate for non-emergency construction and maintenance, trash collection, and parking lot sweeper activity near noise sensitive land uses.*

County of San Diego Ordinance No. 9962, Noise Control and Abatement

County of San Diego Ordinance No. 9962, Noise Control and Abatement, regulates noise in the unincorporated area of the county to promote the public health, comfort, and convenience of the county's inhabitants and its visitors. Table 3.11-7 lists the County of San Diego's sound level limits in decibels. The following provisions for construction are included in the ordinance and are relevant to the proposed project.

- ***Section 36.408. Hours of Operation of Construction Equipment.*** *Except for emergency work, it shall be unlawful for any person to operate or cause to be operated, construction equipment:*
  - *Between 7 p.m. and 7 a.m.*
  - *On a Sunday or a holiday.*

- ***Section 36.409. Sound Level Limitations on Construction Equipment.*** *Except for emergency work, it shall be unlawful for any person to operate construction equipment or cause construction equipment to be operated, that exceeds an average sound level of 75 dB for an 8-hour period, between 7 a.m. and 7 p.m., when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received.*

Table 3.11-7 County of San Diego Sound Level Limits in Decibels

Zone	Time	One-hour Average Sound Level Limits (dBA)
(1) RS, RD, RR, RMH, A70, A72, S80, S81, S87, S90, S92, and RV and RU with a density of less than 11 dwelling units per acre.	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	50 45
(2) RRO, RC, RM, S86, V5, and RV and RU with a density of 11 or more dwelling units per acre.	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	55 50
(3) S94, V4 and all commercial zones.	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	60 55
(4) V1, V2 V1, V2 V1 V2 V3	7 a.m. to 7 p.m. 7 p.m. to 10 p.m. 10 p.m. to 7 a.m. 10 p.m. to 7 a.m. 7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	60 55 55 50 70 65
(5) M50, M52, and M54	Anytime	70
(6) S82, M56, and M58	Anytime	75
(7) S88[(a)]	-	-

Source: County of San Diego Ordinance No. 9962.
Note:
(a) The sound level limits above that apply in an S88 zone depend on the use being made of the property. The limits in subsection (1) apply to property with a residential, agricultural, or civic use. The limits in subsection (3) apply to property with a commercial use. The limits in subsection (5) apply to property with an industrial use that would only be allowed in an M50, M52, or M54 zone. The limits in subsection (6) apply to all property with an extractive use or a use that would only be allowed in an M56 or M58 zone.
Key:

- = Not applicable
dBA = A-weighted decibels
A70 = Limited Agriculture
A72 = General Agriculture
M50 = Basic Industrial
M52 = Limited Industrial
M54 = General Impact Industrial
M56 = Mixed Industrial
M58 = High Impact Industrial
RC = Residential Commercial
RD = Duplex Residential
RM = Multi Family Residential
RMH = Mobilehome Residential
RR = Rural Residential
RRO = Residential Recreation Oriented
RS = Single Family Residential
RU = Urban Residential
RV = Variable Family Residential
S80 = Open Space
S81 = Ecological Resource Area
S82 = Extractive Use
S86 = Parking
S87 = Limited Control
S88 = Specific Plan
S90 = Holding Area
S92 = General Rural
S94 = Transportation and Utility Corridor
V1, V2, V3, V4, V5 = Fallbrook Village Zones

Bonsall Community Plan

The Bonsall Community Plan is complementary to the County of San Diego General Plan and includes a Noise Element that addresses specific source issues and impacts in the Community Plan area. The following goal and policies are outlined in the Noise Element and are relevant to the proposed project. (County of San Diego 2011b)

- ***Noise Goal N-1*** *Protect and enhance Bonsall's acoustical environment by supporting the control of noise at its source, along its transmission path and at the site of sensitive receivers. Maintain an environment free of excessive noise by providing control of noise at its source.*
  - *Policy N-1.1 Require site design and building design controls to minimize noise emissions from noise sources.*
  - *Policy N-1.2 Encourage land use and circulation patterns, which will minimize noise in residential neighborhoods and sensitive wildlife habitat.*
  - *Policy N-1.3 Support limiting truck traffic to designated routes to reduce noise in residential areas.*

Fallbrook Community Plan

Though the proposed project would cross the Community of Fallbrook in unincorporated San Diego County, the Fallbrook Community Plan defers to the County of San Diego General Plan for goals and policies related to noise (County of San Diego 2011c). The Fallbrook Community Plan is discussed in Section 3.10, Land Use and Planning.

Rainbow Community Plan

The Rainbow Community Plan is complementary to the County of San Diego General Plan, and includes a Noise Element. The plan identifies the Interstate (I-) 15 corridor as the primary noise generator in the Rainbow Community Planning Area. The SDG&E gas pumping station, California Highway Patrol weigh station, and the extensive commercial and industrial land uses located in Riverside County near the county line are also identified as significant noise generators in the northern portion of the community. The following goal and policy are outlined in the Noise Element and relevant to the proposed project. (County of San Diego 2011d)

- ***Goal N1.1.*** *Maintain maximum noise levels to current status quo or lower.*
  - *Policy N1.1.1. Defer to County Noise Policy/ordinance for policies.*

City of San Diego

City of San Diego General Plan

The City of San Diego's General Plan includes protections from excessive noise for people living and working in the city. The following goals and policies are outlined in the Noise Element and are relevant to the proposed project. (City of San Diego 2015)

- ***Noise and Land Use Compatibility Goal.*** *Consider existing and future noise levels when making land use planning decisions to minimize people's exposure to excessive noise.*
  - *Policy NE-A.2. Assure the appropriateness of proposed developments relative to existing and future noise levels by consulting the guidelines for noise-compatible land use to minimize the effects on noise-sensitive land uses.*
  - *Policy NE-A.3. Limit future residential and other noise-sensitive land uses in areas exposed to high levels of noise.*
  - *Policy NE-A.4. Require an acoustical study consistent with Acoustical Study Guidelines for proposed developments in areas where the existing or future noise level exceeds or would exceed the "compatible" noise level thresholds as indicated on the Land Use - Noise Compatibility Guidelines, so that noise mitigation measures can be included in the project design to meet the noise guidelines.*
- ***Industrial Activity Noise Goal.*** *Minimal exposure of residential and other noise-sensitive land uses to excessive industrial-related noise.*
  - *Policy NE-F.3. Encourage industrial uses to utilize operation measures that minimize excessive noise where it affects abutting residential and other noise-sensitive uses.*
- ***Construction, Refuse Vehicles, Parking Lot Sweepers and Public Activity Noise Goal.*** *Minimal exposure of residential and other noise-sensitive land uses to excessive construction refuse vehicles, parking lot sweeper—related noise and public noise.*
  - *Policy NE-G.1. Implement limits on the hours of operation for non-emergency construction and refuse vehicle and parking lot sweeper activity in residential areas and areas abutting residential areas.*

  - *Policy NE-G.2. Implement limits on excessive public noises that a person could reasonably consider disturbing and/or annoying in residential areas and areas abutting residential areas.*

- ***Typical Noise Attenuation Methods Goal.*** *Attenuate the effect of noise on future residential and other noise-sensitive land uses by applying feasible noise mitigation measures.*

  - *Policy NE-I.3. Consider noise attenuation measures and techniques addressed by the Noise Element, as well as other feasible attenuation measures not addressed as potential mitigation measures, to reduce the effect of noise on future residential and other noise-sensitive land uses to an acceptable noise level.*

City of San Diego Municipal Code

The City of San Diego's Municipal Code addresses noise abatement and control in Article 9.5. Section 59.5.0404, Construction Noise, which notes that it is unlawful to conduct any construction activity so as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 dB during the 12-hour period from 7:00 a.m. to 7:00 p.m.

City of Escondido

City of Escondido General Plan

The City of Escondido addresses noise in Chapter VI, Community Protection, in the City of Escondido General Plan. The following goal and policies are outlined in Chapter VI and are relevant to the proposed project. (City of Escondido 2012)

- ***Noise, Goal 5.*** *Protection of the community from excessive noise exposure.*

  - *Noise Policy 5.1. Require development to meet acceptable exterior noise level standards as established in General Plan Figure VI-2 as a guide for evaluating the compatibility of new noise sensitive uses with projected noise levels.*

  - *Noise Policy 5.5. Require construction projects and new development to ensure acceptable vibration levels at nearby noise-sensitive uses based on Federal Transit Administrator criteria.*

  - *Noise Policy 5.6. Require the preparation of noise studies, as deemed necessary by the Planning Department, to analyze potential noise impacts associated with new development which could significantly alter existing noise levels in accordance with provisions outlined in General Plan Figure VI-14.*

  - *Noise Policy 5.7. Encourage use of site and building design, noise barriers, and construction methods as outlined in General Plan Figure VI-15 to minimize impacts on and from new development.*

  - *Noise Policy 5.10. Require development projects that are subject to discretionary approval to assess potential construction noise impacts on nearby sensitive uses and to minimize impacts on these uses, to the extent feasible.*

The city identifies residential development and care facilities, schools, churches and transient lodging, hospitals and health care facilities, libraries, museums, cultural facilities, and golf courses and passive recreational sites as noise-sensitive receptors and uses (City of Escondido 2012). The city's exterior incremental environmental noise impact standards for noise-sensitive uses, which are based on the FTA's Transit Noise and Vibration Impact Assessment, are outlined in Table 3.11-8.

Table 3.11-8 City of Escondido Exterior Incremental Environmental Noise Impact Standards for Noise Sensitive Uses

Residences and Buildings Where People Normally Sleep		Institutional Land Uses with Primarily Daytime and Evening Uses	
Existing Ldn (dBA)	Allowable Noise Increment[a] (dBA)	Existing Peak Hour Leq (dBA)	Allowable Noise Increment[a] (dBA)
45	8	45	12
50	5	50	9
55	3	55	6
60	2	60	5
65	1	65	3
70	1	70	3
75	0	75	1
80	0	80	0

Source: City of Escondido 2012.
Note:
(a) The City of Escondido defines an "increment" as incremental exterior noise levels.
Key:
dBA = A-weighted decibel
Leq = equivalent sound pressure level

City of Escondido Municipal Code

Article 12, Noise Abatement and Control, of the City of Escondido Municipal Code outlines general noise regulations, as well as restrictions on the duration and decibel level at which construction equipment may be run. Chapter 17 (Construction Equipment) outlines restrictions on the times of day and duration in which construction equipment may be used. These general noise restrictions are outlined in Table 3.11-9.

Table 3.11-9 City of Escondido Sound Level Limits

Zone	Time	Applicable One-hour Average Sound Level (dB Leq) at the Receptor
Residential	7 a.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
Multi-family Residential	7 a.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
Commercial	7 a.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	55
Light Industrial	Anytime	70
General Industrial	Anytime	75

Source: City of Escondido Municipal Code Article 12
Key:
dB = decibel
Leq = equivalent sound pressure level

City of Poway

City of Poway General Plan

The City of Poway addresses noise hazards in its General Plan, Emergency Services Element (Volume I of the Poway Comprehensive Plan). The following policy and strategies are outlined in the Emergency Services Element and relevant to the proposed project. (City of Poway 1991)

- ***Policy H Noise.*** *Ensure a safe and pleasant acoustical environment for the residents of Poway.*
  - *Strategy 2. Utilize site planning zoning regulations architectural design standards and building construction regulations to reduce noise impacts.*

- *Strategy 3. Require mitigation measures for all proposed projects which are found according to an Acoustical Analysis Report to be subject to incompatible CNEL values.*
- *Strategy 4. Proposed land uses which generate noise should be subject to an Acoustical Noise Report with mitigation measures to be specified.*
- *Strategy 7. When noise protection barriers are needed they shall be located in the most cost effective location. The maximum protection for a given barrier height and length shall be determined by acoustical analysis using the current edition of the FHWA [Federal Highway Administration] noise level model program.*
- *Strategy 8. Noise protection walls may be limited to a height of eight feet even when a taller wall may be needed to achieve Noise Element standards if a taller one is deemed to be aesthetically degrading to the environment.*
- *Strategy 9. Mitigation walls will be at least four feet high even if mitigation calculations call for a shorter wall.*

City of Poway Municipal Code

Section 8.08, Noise Control and Abatement, of the City of Poway's Municipal Code outlines times at which powered construction equipment may be operated, as well as limits of decibel levels and duration of use of equipment. Section 16.44.14 sets limits on when grading, clearing, and equipment operations being conducted in association with a valid grading permit can occur. The following provisions are specified and relevant to the proposed project (City of Poway 2016).

- *It is unlawful for any person, including the City, to operate any single or combination of powered construction equipment at any construction site before 7:00 a.m. or after 5:00 p.m. on Mondays through Saturdays or at any time on a Sunday or holiday except as allowed by a permit provided by the City Engineer.*
- *No such equipment, or combination of equipment regardless of age or date of acquisition, shall be operated so as to cause noise at a level in excess of 75 decibels for more than eight hours during any 24-hour period when measured at or within the property lines of any property which is developed and used either in part or in whole for residential purposes. These sound levels shall be corrected for time duration in accordance with city requirements.*

Table 3.11-10 details the City of Poway's sound level correction time durations.

Table 3.11-10 City of Poway Sound Level Correction Time Durations

Total Duration in 24 Hours	Decibel Level Allowance	Total Decibel Level
Up to 15 minutes	+15	90
Up to 30 minutes	+13	87
Up to 1 hour	+9	84
Up to 2 hours	+6	81
Up to 4 hours	+3	78
Up to 8 hours	0	75

Source: City of Poway 2016.

Marine Corps Air Station, Miramar

Air Installations Compatible Use Zones Study Update

Marine Corps Air Station (MCAS) Miramar, a master jet station, encompasses 23,000 acres in the county of San Diego. MCAS Miramar normally operates from 7 AM to 12 PM Monday through Thursday, 7 AM to 6 PM on Friday, and 8 AM to 6 PM on Saturday, Sunday, and holidays. The MCAS Miramar Air Installations Compatible Use Zones (AICUZ) Study provides an analysis of noise levels, accident potential zones, and obstruction clearance criteria associated with military airfield operations and recommendations for cooperative efforts with the City of San Diego. The City of San Diego has successfully implemented many of the recommendations in the AICUZ. (MCAS Miramar 2005)

MCAS Miramar Airport Land Use Compatibility Plan

The MCAS Miramar Airport Land Use Compatibility Plan (ALUCP) promotes airport land use compatibility by providing for the orderly growth of the airport and surrounding area and safeguarding the general welfare of the inhabitants within the vicinity of the airport. The noise compatibility policies in the ALUCP are consistent with the AICUZ study. Policy 3.3.5 defines acceptable noise levels for specific types of land use development. The threshold for MCAS Miramar noise impact evaluation is the projected CNEL 60 dB contour, which defines the noise impact area of MCAS Miramar. Notably, the federal property on which MCAS Miramar sits is not part of the noise impact area subject to the policies of ALUCP. (County of San Diego 2008)

3.11.3 Draft Significance Criteria

Had an impact analysis been completed for the proposed project, significance criteria would likely have been based on California Environmental Quality Act Guidelines Appendix G. An impact might have been considered significant if the project would:

a) Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

b) Expose persons to or generate excessive groundborne vibration or groundborne noise levels;

c) Create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;

d) Create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels; or

f) For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

3.11.4 Draft Analytical Figures

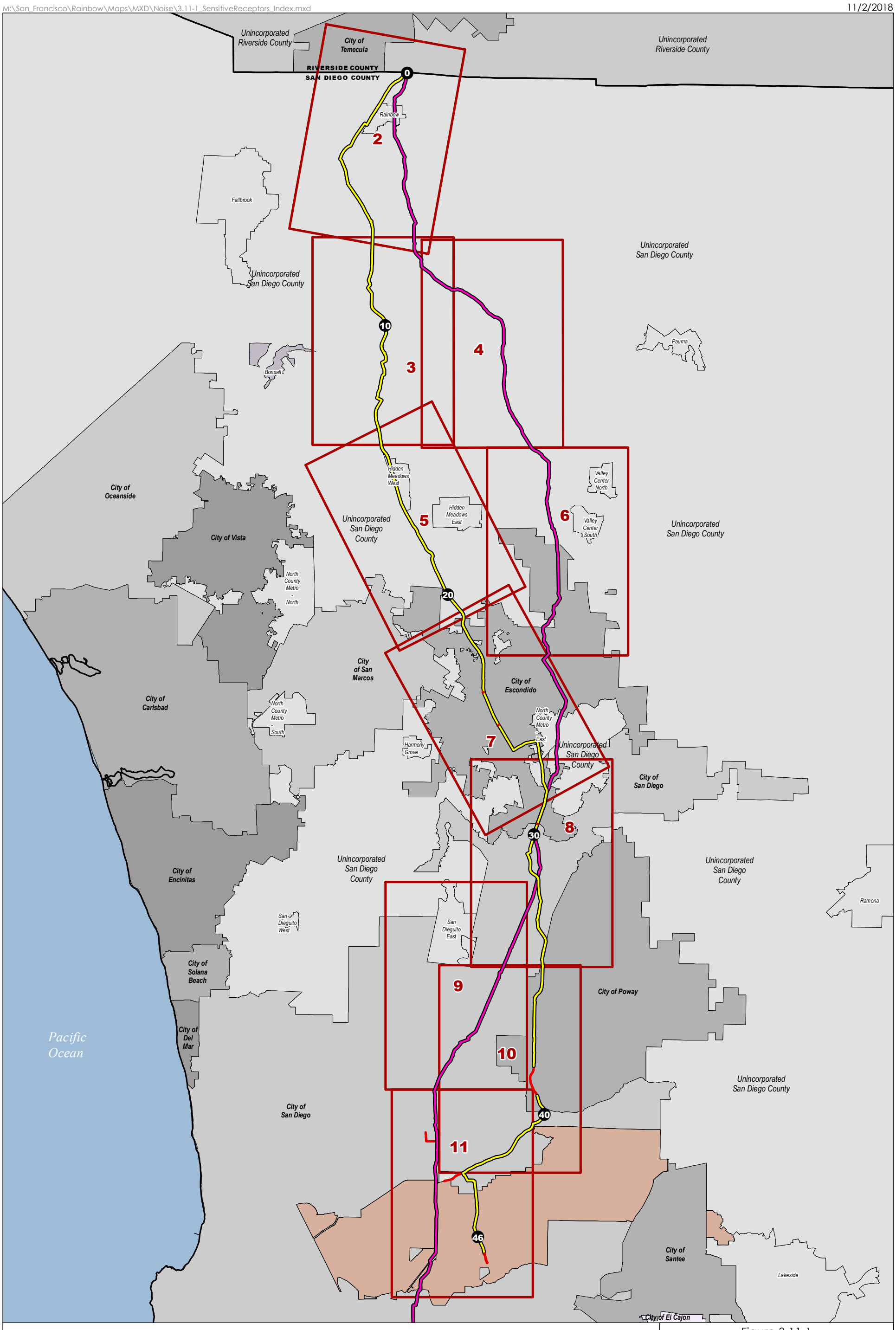


Figure 3.11-1
Sensitive Receptors within 500 Feet of Workspaces
Page 1 of 11
Pipeline Safety and Reliability Project - New Natural Gas Line 3602 and De-rating Line 1600
San Diego County, CA

Sources: ESRI 2012; SanGIS 2016; SDG&E 2017; USMC 2017

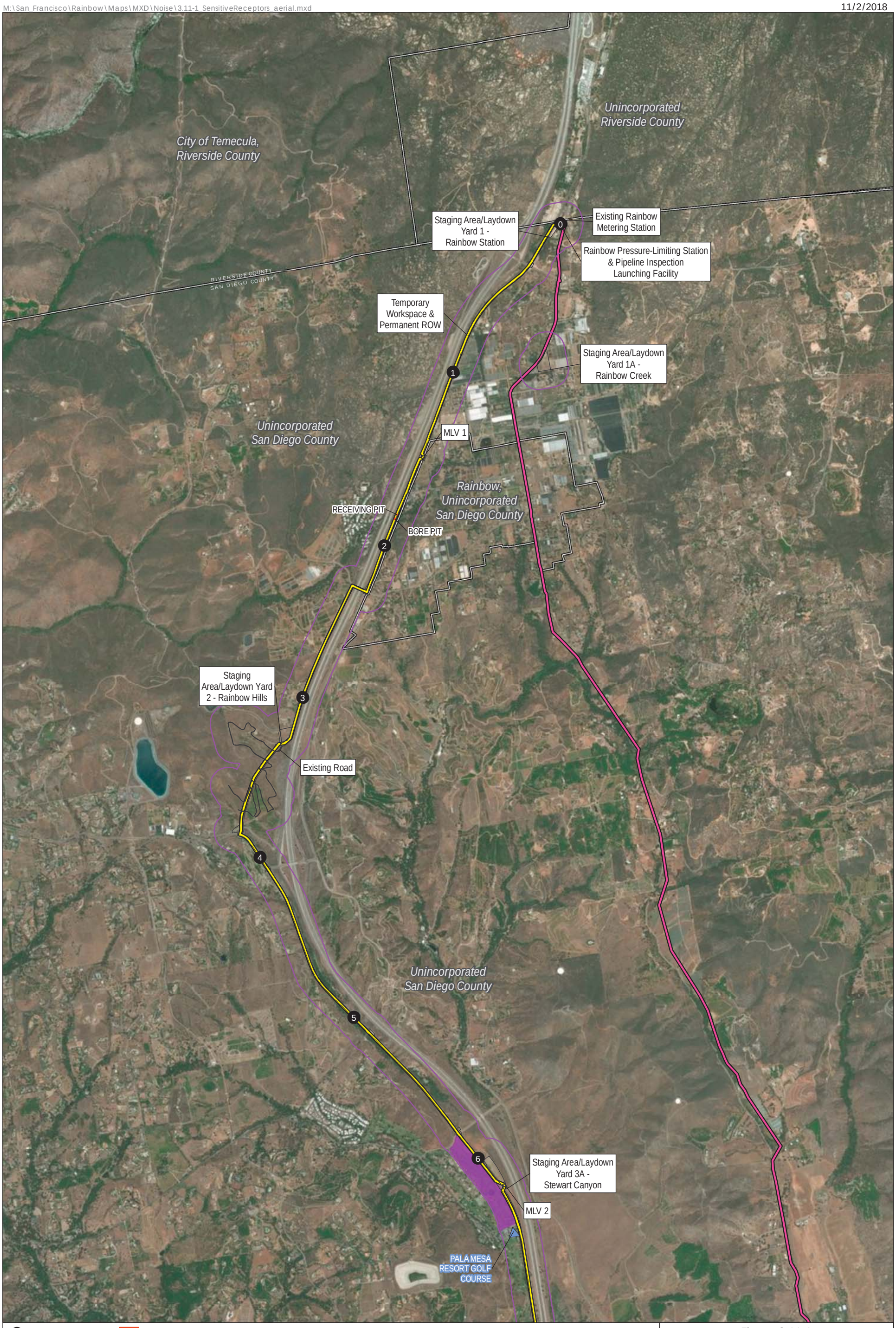


Figure 3.11-1
Sensitive Receptors within 500 Feet of Workspaces
Page 2 of 11
Pipeline Safety and Reliability Project - New Natural Gas Line 3602 and De-rating Line 1600
San Diego County, CA

Sources: CalTrans 2013; ESRI 2012, 2018; GreenInfo 2016; SanGIS 2016a, 2016b; SDG&E 2017; US Census 2010; USMC 2017

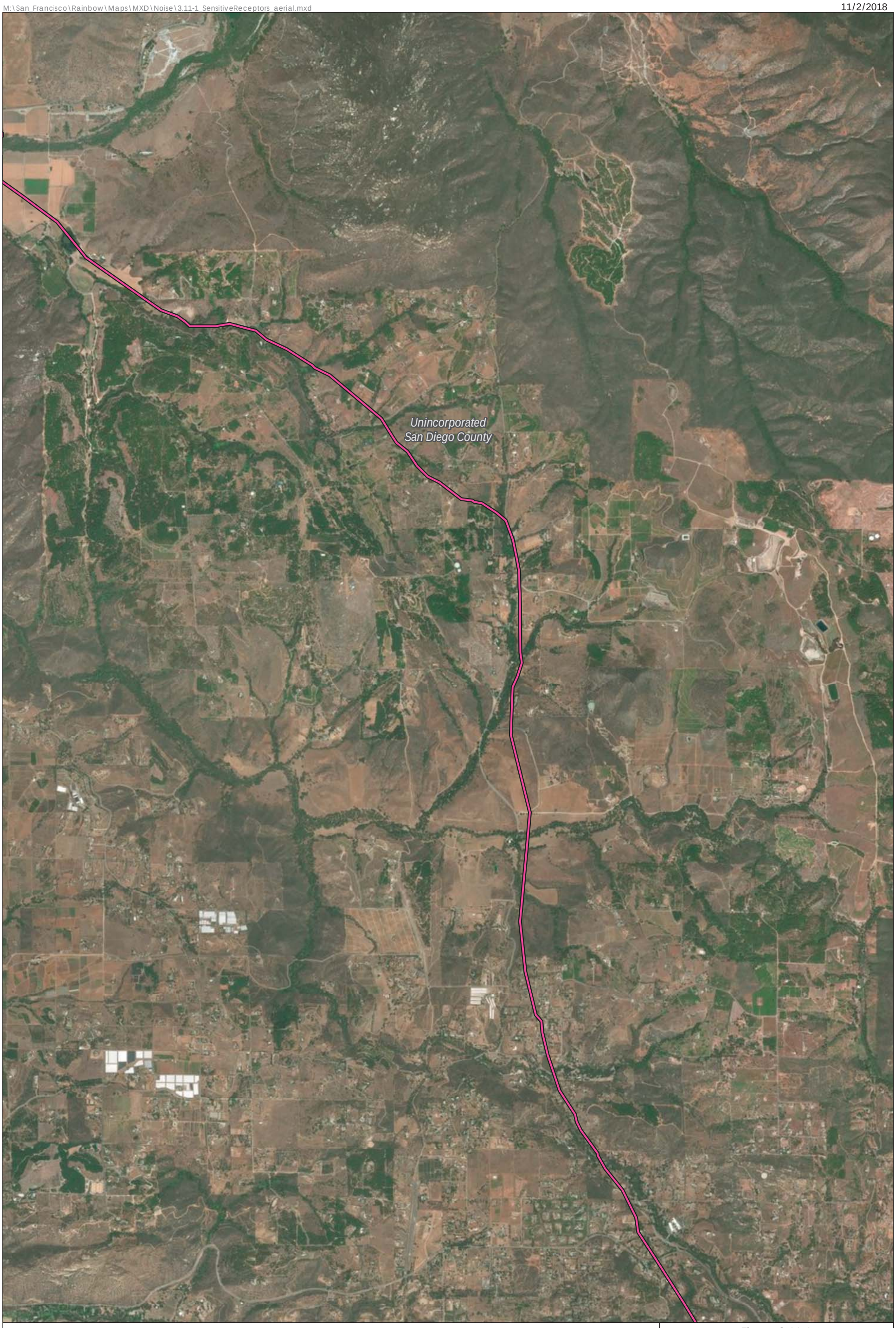
1 Milepost
Line 3602
Existing Line 1600
Bore Pits
Workspaces
500-Foot Buffer
Municipal Boundary
Densely Populated Area within the 500-Foot Buffer of Workspaces
Park

Key:
ROW Right-Of-Way

0 0.25 0.5
Miles

Sources: CalTrans 2013; E[illegible]2012, 2018; GreenInfo 2016; SanGIS 2016a, 2016b; SDG&E 2017; US Census 2010; USMC 2017

Figure 3.11-1
Sensitive Receptors within 500 Feet of Workspaces
Page 3 of 11
Pipeline Safety and Reliability Project - New Natural Gas Line 3602 and De-rating Line 1600
San Diego County, CA



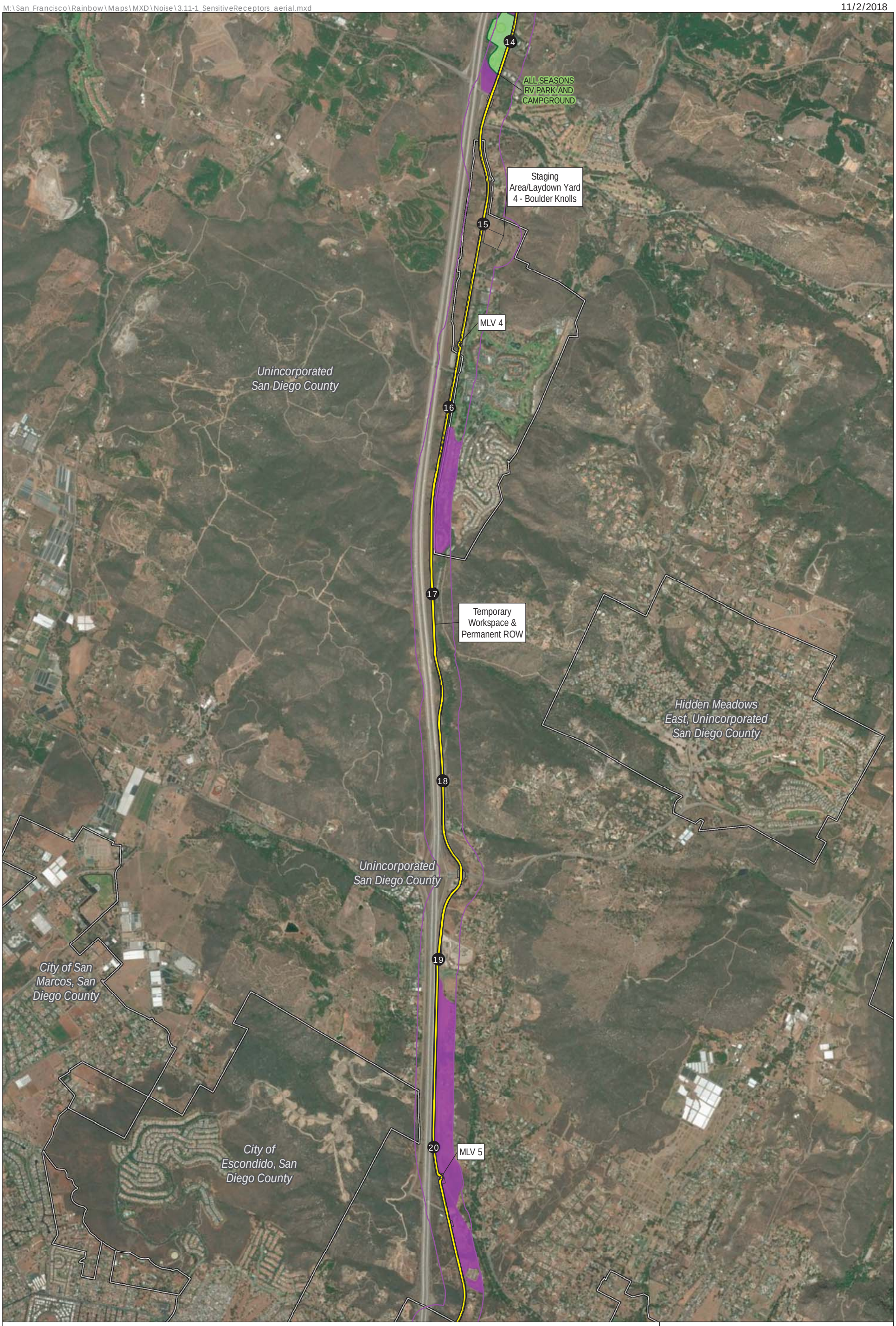
Existing Line 1600

Municipal Boundary

0 0.25 0.5
Miles

Figure 3.11-1
Sensitive Receptors within 500 Feet of Workspaces
Page 4 of 11
Pipeline Safety and Reliability Project - New Natural Gas Line 3602 and De-rating Line 1600
San Diego County, CA

Sources: CalTrans 2013; ESRI 2012, 2018; GreenInfo 2016; SanGIS 2016a, 2016b; SDG&E 2017; US Census 2010; USMC 2017



1 Milepost
Line 3602
Workspaces
500-Foot Buffer
Municipal Boundary
Densely Populated Area within the 500-Foot Buffer of Workspaces
Park

Key:
ROW Right-Of-Way

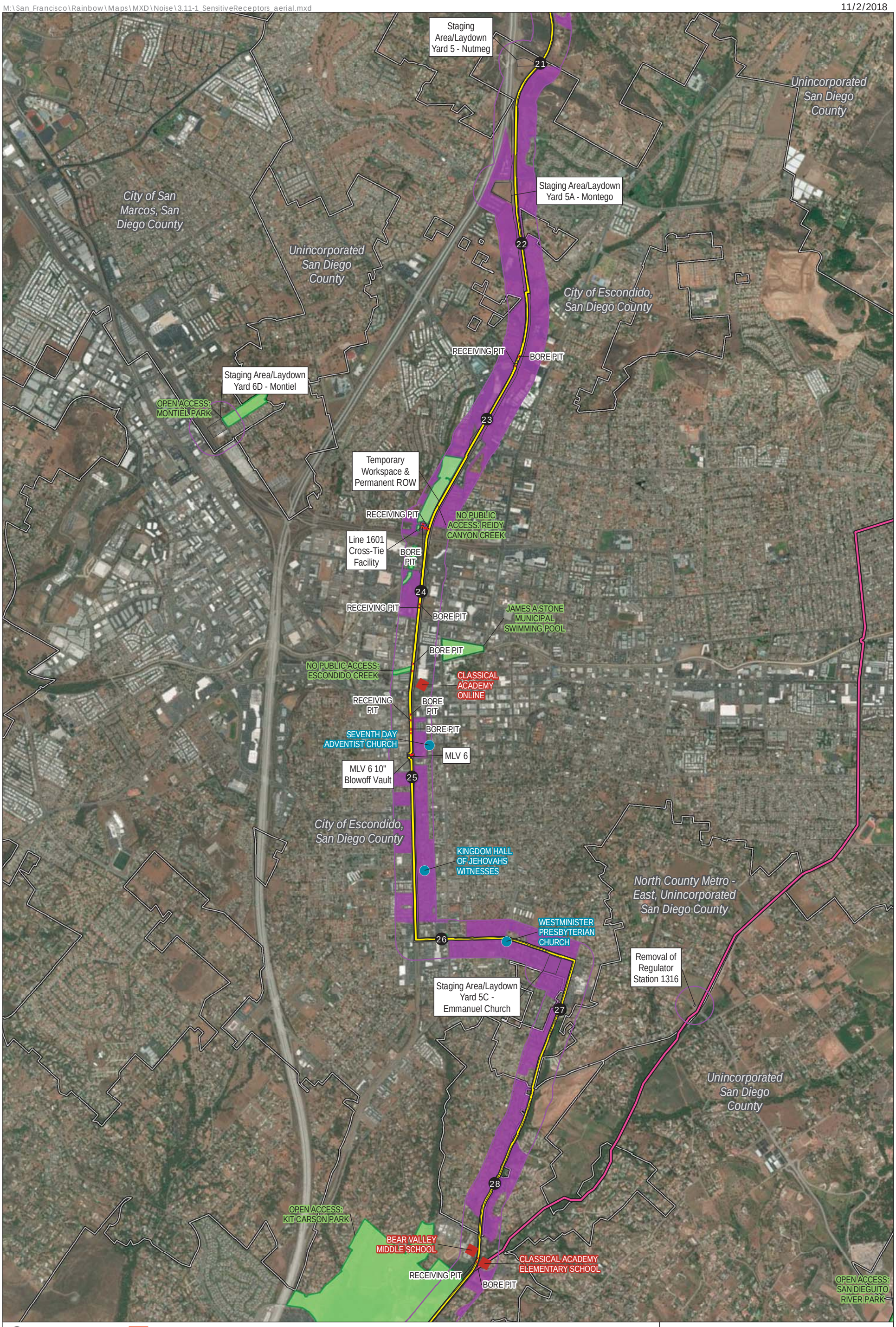
0 0.25 0.5
Miles

Sources: Caltrans 2013; ESRI 2012, 2018; GreenInfo 2016; SanGIS 2016a, 2016b; SDG&E 2017; US Census 2010; USMC 2017

Figure 3.11-1
Sensitive Receptors within 500 Feet of Workspaces
Page 5 of 11
Pipeline Safety and Reliability Project - New Natural Gas Line 3602 and De-rating Line 1600
San Diego County, CA

Figure 3.11-1
Sensitive Receptors within 500 Feet of Workspaces
Page 6 of 11
Pipeline Safety and Reliability Project - New Natural Gas Line 3602 and De-rating Line 1600
San Diego County, CA

Sources: CalTrans 2013; ESRI 2012, 2018; GreenInfo 2016; SanGIS 2016a, 2016b; SDG&E 2017; US Census 2010; USMC 2017



1 Milepost
Line 3602
Tie-Ins & Extensions
Existing Line 1600
Bore Pits
Workspaces
500-Foot Buffer
Municipal Boundary
School
Church
Densely Populated Area within the 500-Foot Buffer of Workspace

Key:
MLV Mainline Valve
ROW Right-Of-Way

0 0.25 0.5
Miles

Figure 3.11-1
Sensitive Receptors within 500 Feet of Workspaces
Page 7 of 11
Pipeline Safety and Reliability Project - New Natural Gas Line 3602 and De-rating Line 1600
San Diego County, CA

Sources: CalTrans 2013; ESRI 2012, 2018; Greenfo 2016; SanGIS 2016a, 2016b; SDG&E 2017; US Census 2010; USMC 2017

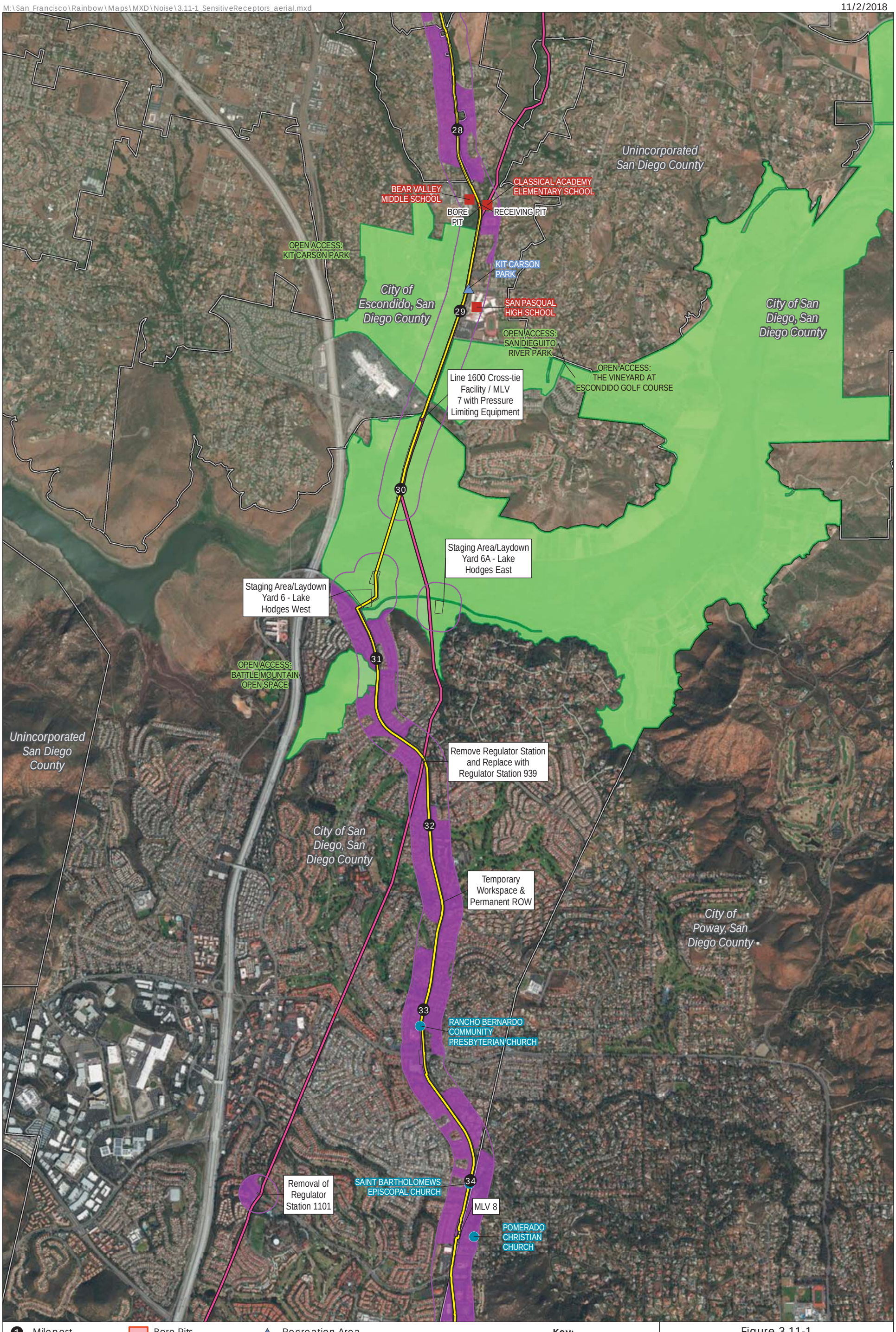


Figure 3.11-1
Sensitive Receptors within 500 Feet of Workspaces
Page 8 of 11
Pipeline Safety and Reliability Project - New Natural Gas Line 3602 and De-rating Line 1600
San Diego County, CA

Sources: CalTrans 2013; ESRI 2012, 2018; GreenInfo 2016; SanGIS 2016a, 2016b; SDG&E 2017; US Census 2010; USMC 2017

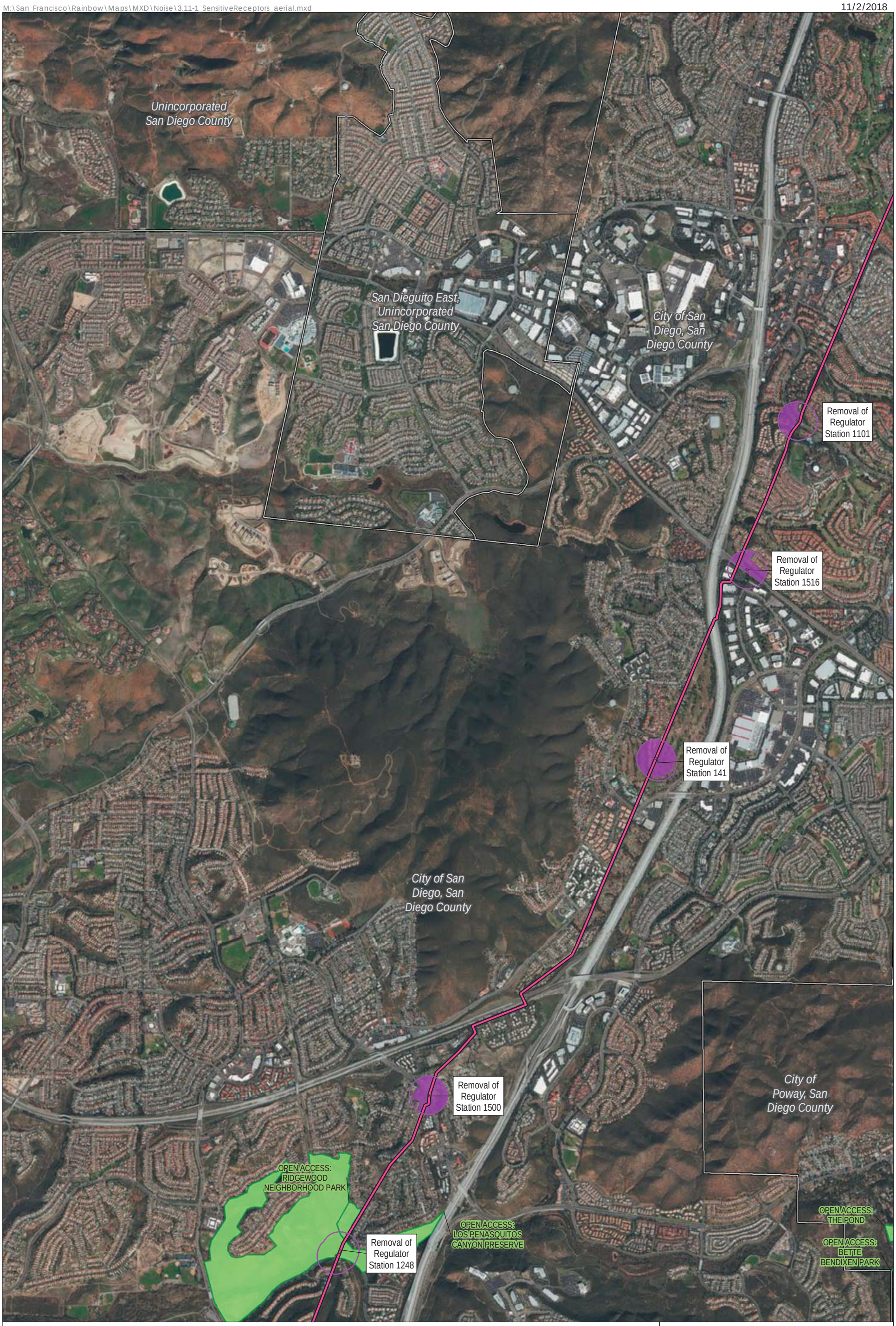
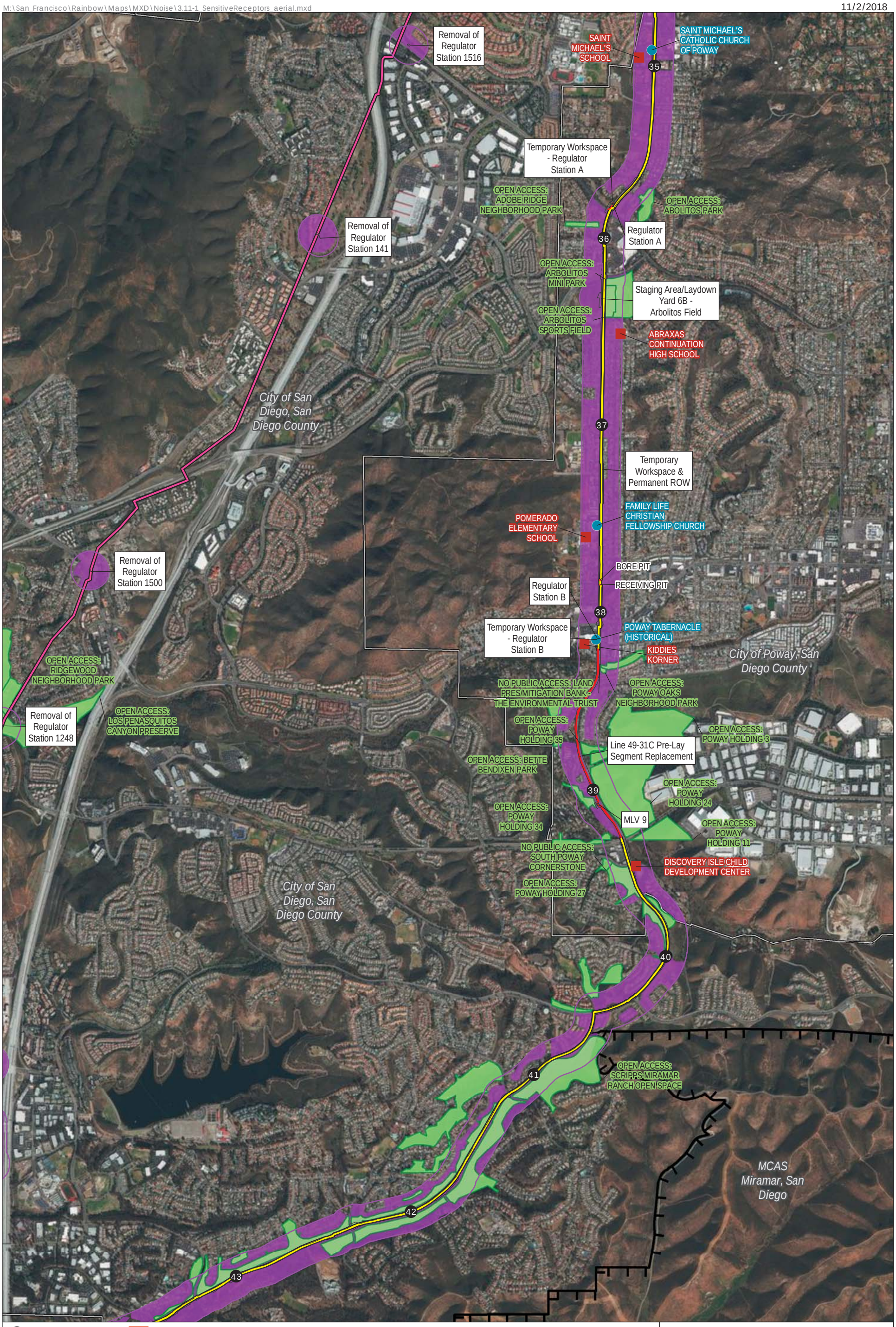


Figure 3.11-1
Sensitive Receptors within 500 Feet of Workspaces
Page 9 of 11
Pipeline Safety and Reliability Project - New Natural Gas Line 3602 and De-rating Line 1600
San Diego County, CA

Sources: CalTrans 2013; ESRI 2012, 2018; GreenInfo 2016; SanGIS 2016a, 2016b; SDG&E 2017; US Census 2010; USMC 2017



Sources: CalTrans 2013; ESRI 2012, 2018; GreenInfo 2016; SanGIS 2016a, 2016b; SDG&E 2017; US Census 2010; USMC 2017

Figure 3.11-1
Sensitive Receptors within 500 Feet of Workspaces
Page 10 of 11
Pipeline Safety and Reliability Project - New Natural Gas Line 3602 and De-rating Line 1600
San Diego County, CA

OPEN ACCESS: LOS PENASQUITOS CANYON PRESERVE
NO PUBLIC ACCESS: SOUTH POWAY CORNERSTONE
OPEN ACCESS: POWAY HOLDING 34
Removal of Regulator Station 1494
OPEN ACCESS: SCRIPPS-MIRAMAR RANCH OPEN SPACE
WALKER ELEMENTARY SCHOOL
Mira Mesa Pipeline Extension
City of San Diego, San Diego County
HOURGLASS COMMUNITY PARK
Removal of Regulator Station 1051
WALKER-WANGENHEIM SCHOOL PARK
41
42
Removal of Regulator Station 1335
Temporary Workspace - Regulator Station C
43
Unincorporated San Diego County
Permanent Patrol Road
Regulator Station C
MLV 10
MARSHALL MIDDLE SCHOOL
Staging Area/Laydown Yard 6C - Alliant
44
Line 49-31B Replacement
Temporary Workspace & Permanent ROW
45
MCAS Miramar, San Diego
46
Removal of Regulator Station 982
46.6
Line 2010 Cross-tie Facility & Pipeline Inspection Receiving Facility
City of San Diego, San Diego County

1 Milepost
Line 3602
Tie-Ins & Extensions
Existing Line 1600
Workspaces
500-Foot Buffer
MCAS Miramar
Municipal Boundary

Key:
ROW Right-Of-Way

0 0.25 0.5
Miles

Sources: CalFans 2013; ESRI 2012, 2018; GreenInfo 2016; SanGIS 2016a, 2016b; SDG&E 2017; US Census 2010; USMC 2017

Figure 3.11-1
Sensitive Receptors within 500 Feet of Workspaces
Page 11 of 11
Pipeline Safety and Reliability Project - New Natural Gas Line 3602 and De-rating Line 1600
San Diego County, CA

3.11.5 References

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