2.6 Hazards and Hazardous Materials

This section provides a summary of potential impacts related to public safety risks/hazards associated with airport operations, emergency response plans, and vectors caused by implementation of the proposed Project. This section also analyzes the project's potential for on-site contamination, as well as the project's proximity to known hazards or potentially hazardous uses.

The airport hazards analysis presented in this section is based on the *California Airport Land Use Planning Handbook* (*Handbook*; Oct. 2011), published by the State of California's Department of Transportation, Division of Aeronautics (Caltrans), as well as a technical memorandum authored by Mead & Hunt regarding "Otay Ranch Resort Village: Safety Zone Boundaries for John Nichol's Field." The *Handbook* is available for public review and inspection at http://www.dot.ca.gov/hq/planning/aeronaut/documents/alucp/AirportLandUsePlanning Handbook.pdf; and a copy of Mead & Hunt's technical memorandum is included as **Appendix C-20** to this EIR.

The analysis presented in this section is also based on the Otay Ranch Resort Village Phase I Environmental Site Assessment (Phase I) included as **Appendix C-9** to this EIR, and the Otay Ranch Resort Village Phase I Environmental Site Assessment West Residential Area Parcels A and B, included as **Appendix C-10** to this EIR. In addition, this section addresses the potential for wildfire impacts based on a Fire Protection Plan (FPP) prepared for the Project, which is included as **Appendix C-21**

The Otay Ranch PEIR was adopted in 1993 and provided a program-level analysis of the existing conditions and potential impacts related to hazards, hazardous materials, and the risk associated with disturbance of any hazardous materials for the entire Otay Ranch area, which includes the Project site. The Otay Ranch PEIR identified significant impacts associated with hazards and hazardous materials. As a result, mitigation measures were adopted in the PEIR to reduce impacts to a less than significant level.

2.6.1 Existing Conditions

2.6.1.1 Topographical Characteristics

The topography is varied throughout the Project site. The regional topographic gradient trends to the south, toward Lower Otay ~~Lake~~Reservoir. Site elevation ranges from approximately 1,500 feet AMSL in the northern portion of the Project site to approximately 500 feet AMSL along the southern boundary. The Project site's surface drainage is to the south-southwest via five unnamed, seasonal drainages, which drain into Lower Otay ~~Lake~~Reservoir. Floodplain zoning for the Project site is in an area of minimal flooding. Information related to flood hazards is provided in Section 3.2, Hydrology and Water Quality.

2.6.1.2 Geologic Setting

The Project site is located in the Peninsular Ranges physiographic province of southern California. According to a geologic map of the area, the Project site is underlain by metavolcanic rocks and Tertiary sedimentary rocks. The metavolcanic rocks are Santiago Peak Volcanics, a somewhat metamorphosed sequence of the Upper Jurassic volcanic and volcaniclastic rocks, underlain by the Southern California Batholith, which is mostly Cretaceous in age. The Tertiary sedimentary rocks, which overlie the older Santiago Peak Volcanics, are classified as Otay Formation (Oligocene to Miocene) and consist of sandstone, siltstone, claystone, and fanglomerate. No ultramafic or similar rocks are mapped in the Jamul Mountains quadrangle or in other nearby areas; the potential for the presence of naturally occurring asbestos (NOA), therefore, is very low.

2.6.1.3 Soils Characteristics

As described by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service, there are at least six types of surface soils on the Project site. A brief description of these soils and their permeability classification are listed below.

Soil Type	Description	Permeability
Diablo-Olivenhain complex; 9 to 30% slopes (DoE)	Found on uplands and consists of deep clays derived from soft, calcareous sandstone and shale.	Slow
Friant rocky fine sandy loam; 9 to 30% slopes (FxE)	Found on mountainous uplands and consists of fine sandy loams that formed in material weathered from fine-grained metasedimentary rock.	Moderately rapid
Friant rocky fine sandy loam; 30 to 70% slopes (FxG)	Found on mountainous uplands and consists of fine sandy loams that formed in material weathered from fine-grained metasedimentary rock.	Moderately rapid
Olivenhain cobbly loam; 9 to 30% slopes (OhE)	Found on dissected marine terraces and consists of deep cobbly loams formed in old gravel and cobbly alluvium.	Moderate
San Miguel-Exchequer rock silts loams; 9 to 70% slopes (SnG)	Found in mountainous areas and consists of deep silt loams with a clay subsoil that are derived from metavolcanic rock.	Slow to moderate
Redding cobbly loam; 9 to 30% slopes (ReE)	Found on dissected terraces and consists of steep gravelly loams that formed in old mixed cobbly and gravelly alluvium.	Moderate

2.6.1.4 Hydrogeologic Setting

The Project site is in the Savage Hydrologic Subarea (HSA) of the Dulzura Hydrologic Area of the Otay Hydrologic Unit of the San Diego Hydrologic Basin (Basin Number 10.31). Beneficial uses of the groundwater within the Savage HSA include agricultural, municipal, and industrial uses. Depth to groundwater in this area is estimated to be approximately 300 feet or more below ground surface, based on the estimated depth of water in a well located on the Project site. Groundwater flow for the Project site is estimated to generally follow the topographic gradient, which is in the south-southwest direction.

2.6.1.5 Historical Setting

Previous Environmental Studies

The following two environmental site assessments were previously prepared for assessment areas that included portions of the Project site, as described below.

Phase I Environmental Site Assessment, Parcel 99, Otay Ranch, dated February 7, 2000, prepared by Snyder Consulting

The northern portion of Parcel 99 was previously assessed and included 340 acres covering the northwestern corner of the Project site. As part of the assessment, historical resources were evaluated, including a review of aerial photographs and an interview with a former Otay Ranch overseer. The aerial photography indicated that the assessed area had been undeveloped since prior to 1928 through the time of the assessment. The Otay Ranch overseer indicated that he grazed longhorn cattle on this portion of the property from 1989 through 1999 and was not aware of any insecticides or herbicides having been applied to the assessed area.

During the assessment, no chemicals, hazardous materials and waste, or underground or aboveground storage tanks were observed on the Project site. The Project site was undeveloped and unoccupied. No recognized environmental issues were identified during the site assessment, and additional assessment of the area was not recommended.

Phase I Environmental Site Assessment, Resort Site Open Space, dated May 29, 2003, prepared by P&D Environmental

The assessed area included 1,330 acres of the northern portion of the Project site. A review of historical resources indicated that grazing activity has not occurred on the Project site since 1999.

During the assessment, no chemicals, hazardous materials and waste, underground or aboveground storage tanks, wells, septic systems, pits, ponds, lagoons, or transformers were observed on the Project site. No recognized environmental issues were identified during the site assessment and additional assessment of the area was not recommended.

Historical Records

To determine past use of the Project site and to discover the occurrence of activities conducted on, or in the vicinity of, the Project site that may have adversely affected the site, a search of selected and readily available historical records was performed and interviews were conducted with people having knowledge of the Project site history. A detailed chronological review, based on the results of the historical records search, is provided as **Appendix C-4** to this EIR. A summary of the chronological review is provided below.

The western portion of the Project site was first settled in 1829 by the Estudillo family, and became part of Rancho Janal, a ranch used primarily for raising cattle for the hide trade. The eastern portion was not originally part of the rancho. Sometime between 1872 and 1889, Frank Kimball acquired

Rancho Janal. In 1889, Mr. Kimball sold the property to John D. Spreckels. During this time, historical records suggest that mining may have occurred on the property, but the type of mining was unspecified and no other information was found during the assessment to suggest that mining occurred on the property during any other time. The Mineral Resources Study provided as **Appendix C-15** to this EIR found no specific evidence that mining ever occurred on-site.

In the early 1900s, the property passed to the Babcock family, who used the property as a hunting lodge. During the 1920s, Rancho Janal ownership passed from Mr. Babcock to Rube Harrison, and then to Henry Fenton and his Western Salt Company. An aerial photograph from that time depicts the Project site as undeveloped land with one dirt track across the top of the Project site leading down to Proctor Valley, and other small dirt tracks leading into the Project site from Otay Lakes Road. Evidence of hazardous materials use on the Project site was not found.

In the 1930s, the Stephen Birch family began purchasing property in and around Ranchos Otay and Janal. The Birch family lived at Rancho del Otay and operated their ranch under the name Otay Agricultural Corporation, until renaming it United Enterprises. The Birch family ranch was used for growing lima beans, hay, and grain, and for cattle ranching. Based on previous Phase I interviews, it appears that the Birch family primarily used the land on the Project site for cattle ranching. The Birch family continued to own the Project site until the 1980s. Evidence of hazardous materials use on the Project site was not found. Aerial photographs reveal evidence of dry farming in the southwestern portion of the Project site between 1960 and 1963. It is possible, but not likely, that chlorinated pesticides were used on the Project site in conjunction with the dry farming.

In 1988, the Project site was acquired by Baldwin Vista Associates, L.P., a company owned by James and Alfred Baldwin. The Project site continued to be used for cattle grazing from 1989 to 1999, and was held by various Baldwin-controlled entities from 1997 until July 1999, when the Project site was transferred to Otay Project, L.P. The current owners of the Project site are Moller Otay Lakes Investment, LLC, and Lakeview 1 & 2, LLC. Evidence of hazardous materials use on the Project site was not found for 1988 to the present.

Historical Use of Adjoining Sites

Specific historical research was not conducted for the adjoining sites and surrounding area. However, in the process of researching historical data for the Project site, the following historical information was obtained regarding the adjoining sites. No issues of environmental concern associated with the past use of these adjacent sites were identified.

The sites adjoining the Project site to the north consist of undeveloped mountainous land. Research did not reveal any specific purpose or uses of these sites during the last 150 years.

The site adjoining the Project site to the northeast is undeveloped mountainous land. Dating back to approximately 1830, Rancho Jamul was adjacent to the southeast corner of the Project site. The western portion of Rancho Jamul included mountainous lands and Jamul Creek, which are immediately adjacent to the Project site.

Otay Lakes Road currently forms the southern boundary of the Project site. Otay Lakes Road has been visible on aerial photographs and topographic maps since approximately 1928. Prior to that time, since the mid- to late 1800s, a road connecting San Diego with Jamul was located south of the Project site. Presumably, this road followed the same corridor as Otay Lakes Road.

Lower Otay ~~Lake~~ Reservoir is located south of the Project site. Lower Otay ~~Lake~~ Reservoir was formed in 1897 after construction of Lower Otay Dam by the Southern California Mountain Water Company, a company formed with the combined water interests of Elisha Babcock and John Spreckels. However, the dam was built without a spillway and, in January 1916, floods washed away Lower Otay Dam. Lower Otay ~~Lake~~ Reservoir was restored after dam reconstruction was completed in 1918. At that time, the dam was renamed Savage Dam. Ownership of Lower Otay ~~Lake~~ Reservoir was transferred to the City of San Diego sometime after 1918. Since the transfer, the City has continued to own and maintain Lower Otay ~~Lake~~ Reservoir as a drinking water reservoir.

John Nichol's Field is also located south of Otay Lakes Road and north of the mouth of Jamul Creek. The airfield runway is located approximately 900 feet south of the easternmost portion of the Project site. No information was found indicating that aboveground or underground fuel storage tanks have ever been stored on the site.

Upper Otay ~~Lake~~ Reservoir is located to the west of the Project site. Upper Otay ~~Lake~~ Reservoir was formed in 1901, when Upper Otay Dam was built. Upper Otay ~~Lake~~ Reservoir was originally built as an emergency reserve for Lower Otay ~~Lake~~Reservoir. However, beginning in 1959 and continuing through to the present, it has been used as a fish hatchery and recreational fishing area for Florida-Strain largemouth bass. The remainder of the adjacent area east of the Project site includes undeveloped mountainous land.

2.6.1.6 Site Reconnaissance

Coast 2 Coast conducted three site visits to the Project site. The purpose of the first visit, on April 11, 2005, was to determine if current usage or activities on the Project site have created, or have the potential to create, an environmental impairment to the Project site. The purpose of the second and third visits, on May 17, 2006, and September 11, 2009, was to obtain updates on the condition of the Project site. During site reconnaissance, Coast 2 Coast focused on viewing areas where activities likely to use and generate hazardous materials would typically occur.

Access to the Project site is restricted by locked gates; however, the U.S. Border Patrol accesses the property to conduct surveillance and gates are not always relocked. During all visits, the Project site was observed to be unoccupied and undeveloped. Tenants using or generating hazardous materials were not observed. There were no buildings observed on the Project site. The primary observable difference in the Project site over the course of the site visits was a decrease in the amount of vegetation observed on the Project site during the second visit, due to the contrast between the abnormally wet 2005 winter season and the drier 2006 and 2008/2009 winter seasons. The vegetation did not appear to be damaged or stressed in a manner that could be attributed to the presence of contamination.

Coast 2 Coast observed the Project site for the following improvements and features, and for evidence of the use, treatment, storage, disposal, or generation of hazardous substances or petroleum products. Drains and sumps were not observed on the Project site. Strong, pungent, or noxious odors were not detected during the assessments. Easements for oil or gas pipelines were not found, and oil wells were not found within a 1-mile radius of the Project site. Transformers and other potential polychlorinated biphenyl (PCB)-containing equipment were not observed on the Project site. Evidence of stains or corrosion by hazardous substances was not observed. Significant soil or pavement staining was not observed on the Project site. Stored hazardous materials were not observed. Storm drains were not observed. Surface anomalies or depressions were not observed on the Project site. Five unnamed seasonal drainages were observed flowing north to south across the Project site; therefore, it appeared that surface drainage on the Project site flowed south-southwest. Two aboveground abandoned water storage tanks and a cattle feed structure that were observed in the 2005 and 2006 site visits had been removed prior to the 2009 site visit. Underground storage tanks were not observed. A water well observed in the southwestern portion of the Project site that was uncapped during the May 2006 site visit had been capped prior to the 2009 visit. Finally, no evidence of solid waste or hazardous waste disposal or illegal dumping was observed on the Project site in 2009, except for incidental illegal dumping of household trash and debris.

Due to the absence of any buildings on the site, there was no evidence of asbestos-containing materials or lead-based paint. Based on the 1990 California Department of Health Services California Statewide Radon Survey Screening Results for San Diego County, it is not anticipated that radon poses a significant environmental threat to the Project site.

In addition, as mentioned above, although farming was not observed on the Project site in any aerial photographs taken prior to 1953 or after 1963, a 1960 aerial photograph depicted dry farming in the southwestern portion of the Project site. Although intensive agriculture can lead to contamination, dry farming is conducted with minimal inputs to minimize expenses, so chemical pesticides would have been used in very small quantities if at all. Photos taken after 1960 do not show any evidence of farming but rather that the natural topography and vegetative cover remain undisturbed. Given the short duration and low intensity of agricultural use, the potential for hazardous contamination is not significant.

No issues of further environmental concern or "Recognized Environmental Conditions" were found during the assessment, and Coast 2 Coast determined that further environmental assessment of the property is not warranted at this time.

2.6.1.7 Environmental Database Records Review

Coast 2 Coast reviewed the results of a search of environmental database records, including federal and state American Society for Testing and Materials (ASTM) standard databases, conducted by Environmental Data Resources, Inc. (EDR). The first search was completed in May 2005 and a second search to update the data was completed in May 2006. A complete list of the databases reviewed is included in the Phase I, and copies of EDR's reports are found in the **Appendix C-10**. The Project site, adjoining sites, and nearby sites were not found within the search radii for the databases reviewed.

EDR also researched additional databases, including federal and state supplemental ASTM standard databases and tribal records, to enhance and supplement the results from the standard environmental database sources. A complete list of databases reviewed is included in **Appendix C-10**. The Project site, adjoining sites, and nearby sites were not found within the search radii for the databases reviewed.

2.6.1.8 Fire Risks

Topography

Site topography is characterized by a broad mesa sloping to the south, broken by several steep canyons generally draining from north to south. Portions of the relatively flat mesa extend north into the Jamul Mountains, where the terrain is primarily characterized by steeper slopes. The site's average slope is approximately 44 percent. Slope is important relative to wildfire because steeper slopes typically facilitate more rapid fire spread. The steeper slopes are primarily within the areas designated as permanent open space preserve and would not be developed.

Vegetation

The Project site is currently vacant, with historic vegetation consisting of native coastal sage scrub and grassland habitats. Some riparian vegetation occurs in Project site drainages. More detailed information regarding the site's plant communities is provided in Section 2.3, Biological Resources. Coastal sage scrub and grassland habitats are highly flammable, while other vegetation, such as oak and sycamore riparian, is less flammable due to its higher moisture content, but will burn under certain conditions.

Climate

Throughout southern California, climate has a large influence on fire risk. The Project site climate is typical of a Mediterranean area, with warm, dry summers and wetter winters. Precipitation typically occurs between December and March. The prevailing wind is an on-shore flow with fall Santa Ana winds from the northeast that may gust to 50 mph or faster. Drying vegetation (fuel moisture of less than 5 percent for 1-hour fuels is possible) during the summer months becomes fuel available to advancing flames should an ignition occur. Extreme conditions, used in fire modeling for this site, include 92°F temperatures in summer and winds of up to 50 mph during the fall. Relative humidity of 12 percent or less is possible during fire season.

Fire History

Fire history information can provide an understanding of fire frequency, fire type, most vulnerable areas, and significant ignition sources. There have been numerous fires recorded by the California Department of Forestry and Fire Protection (Cal Fire) on its Fire and Resource Assessment Program (FRAP) database in the direct vicinity of the Project area, including five fires that have burned on the property. The most notable fire occurred on October 26, 2003, and burned nearly 40,000 acres in the Otay Mesa area, including the entire Project area. Much of the property has

burned four times over approximately 125 years, with fewer fire occurrences in the western portion.

Safety Element of the San Diego County General Plan

The Safety Element (County of San Diego 2011) identifies the following policies to reduce the risk from exposure to wildland fires:

Policies

S-3.1: Defensible Development. Require development to be located, designed, and constructed to provide adequate defensibility and minimize the risk of structural loss and life safety resulting from wildland fires.

S-3.2: Development in Hillsides and Canyons. Require development located near ridgelines, top of slopes, saddles, or other areas where the terrain or topography affect its susceptibility to wildfires to be located and designed to account for topography and reduce the increased risk from fires.

S-3.3: Minimize Flammable Vegetation. Site and design development to minimize the likelihood of a wildfire spreading to structures by minimizing pockets, peninsulas, or islands of flammable vegetation within a development.

S-3.4: Service Availability. Plan for development where fire and emergency services are available or planned.

S-3.6: Fire Protection Measures. Ensure that development located within fire threat areas implement measures that reduce the risk of structural and human loss due to wildfire.

S-4.1: Fuel Management Programs. Support programs consistent with State law that require fuel management/modification within established defensible space boundaries and when strategic fuel modification is necessary outside of defensible space, balance fuel management needs to protect structures with the preservation of native vegetation and sensitive habitats.

2.6.1.9 Aeronautical Uses

Description of John Nichol's AirField

John Nichol's AirField is a private- and restricted-use airfield situated near the southeastern edge of the San Diego metropolitan area at the end of the eastern arm of Lower Otay ~~Lake~~Reservoir. The airfield is located on a 24.1-acre site owned by the City of San Diego and leased to Tactical Air Operations, Inc. At present, the airfield operator's lease is scheduled to expire in 2020~~on September 30, 2015; although the lease contains an option allowing extension of the term until 2025 (provided certain conditions are met).~~ The lease, which was executed in 2000 subsequent to the approval of the Otay SRP, provides that the site is be used solely and exclusively for conducting skydiving and ultralight aviation activities.

The airfield has been in use for more than 40 years and, consistent with the lease terms, presently serves as a base of operations for Skydive San Diego, a commercial skydiving/parachute training center. The airfield's other function is as a base for ultra-light/light sport aircraft activity. (Ultralights are very small, light-weight (less than 254 pounds empty weight), single-seat, recreational aircraft.) As a restricted-use facility, the airfield is generally closed to transient aircraft or aircraft not based there. Non-based aircraft must obtain prior permission to land.

All aircraft currently based at the airfield are associated with either skydiving or ultralight activity. Specifically, there are two Cessna Caravan jump planes (single-engine Blackhawk-conversion turboprops carrying up to 21 people each), three Twin Otter jump planes (twin-engine turboprops carrying up to 23 people each), and approximately 20 ultralight/light sport aircraft. There are no other aircraft based at the airfield.

Daily jump plane activity at the airfield varies significantly and is highly dependent upon the day of the week, the training mission being conducted, and the weather/wind. According to the airfield operator, on a busy day, there can be between 30 to 50 jump plane departures. Weekends and periods when Navy Seal training is being conducted constitute the busiest operational periods. Annual jump plane activity is estimated at 7,500 departures (15,000 total operations) by the airfield operator, which averages out to approximately 20 flights per day, with all operations flown by professional pilots.

The ultralight/light sport aircraft are usually operated in the vicinity of the airfield and typically only during low-wind conditions (i.e., mornings and late afternoons). Ultralight aircraft activity is estimated at approximately 3,000 annual departures (6,000 total operations) by the airfield operator.

The activity levels reported by the airfield operator are substantially higher than those witnessed by the EIR preparer. More specifically, several site visits were conducted by noise specialists and only two aircraft were observed at the airfield. During those site visits, a total of four flight operations were observed, with each one occurring on a separate day (AECOM 2012).[14]

The airfield has two runways, one paved and one unpaved, with both oriented roughly east/west. The paved primary runway (Runway 9-27) was unpaved until about 10 years ago. It now has approximately 1,800 feet of pavement, 50 feet wide, plus 200 feet of paved safety area on the east end and 600 feet of dirt overrun on the western end that are not considered part of the runway length. The secondary runway (Runway 5-23) is a 600-foot, dirt strip used occasionally by ultralights when the wind dictates. Neither runway is lighted; thus, all activity is during daylight hours only. There are no published instrument procedures serving the airfield.

All takeoffs and landings are made from the east to the west (i.e., on Runway 9-27) because the predominant winds (98% of the time) are from the west. Jump planes and ultralight/light sport aircraft taking off from Runway 9-27 turn to the left upon lift-off to climb-out over the eastern arm of Lower Otay ~~Lake~~Reservoir. The departing jump planes then make a 180-degree left turn to

[14] As shown below in Section 2.6.2.3, operation counts are not utilized to determine consistency with the *Handbook*'s safety criteria. Therefore, the numerical discrepancy between the operation counts provided by the airfield operator and the activity levels observed by AECOM does not affect the integrity of the analysis.

proceed back to the south of the airfield with a subsequent 180-degree left turn at altitude to release the jumpers. All jump runs are made from east to west with the jumpers targeting the drop zone located near the center of the airfield. When the jump planes have completed their run, they return to the airfield generally entering a standard left pattern for Runway 9-27 to the south of the airfield below 2,000 feet MSL, approximately 1,500 feet above the airfield 490-foot elevation.

Based on documentation maintained by the National Transportation Safety Board, accident reports for John Nichol's AirField relate to incidents occurring on August 23, 1984 (on-airfield incident); August 6, 2012 (on-airfield incident); and, September 30, 2012 (off-airfield incident). The referenced reports are included as **Appendix C-22** to this EIR.

The *Handbook*: Its Purpose, Function, And Application Relative To John Nichol's Airfield

As explained further below, neither the State Aeronautics Act's airport land use compatibility planning provisions, nor the *Handbook* expressly apply to private use airports, such as John Nichol's Field. Indeed, the San Diego County Regional Airport Authority, acting in its capacity as the San Diego County Airport Land Use Commission (ALUC), has not adopted an Airport Land Use Commission Plan (ALUCP) for John Nichol's Field or any other private use airport in the County. (See San Diego County Regional Airport Authority, Land Use Compatibility, available at http://san.org/sdcraa/airport_initiatives/land_use/default.aspx [last visited Feb. 26, 2013].) Nonetheless, the County utilizes the *Handbook* in assessing land use compatibility in relation to private airports/airfields.

As background, the objectives of the State Aeronautics Act relative to airport land use compatibility planning are to: (1) provide for the orderly development of each public use airport and the area surrounding such airports, and (2) protect public health, safety and welfare by ensuring the orderly expansion of airports. (Pub. Util. Code, §21670, subd. (a).) Relatedly, the express purpose of the *Handbook* "is to provide guidance for conducting airport land use compatibility planning as required by" the State Aeronautics Act, and specifically sections 21674.5 and 21674.7. (*Handbook*, p. vii.)

In furtherance of these objectives, the State Aeronautics Act requires the creation of ALUCs on a county-by-county basis. The statutorily enumerated powers and duties of ALUCs are to: (1) assist local agencies in ensuring compatible land uses in the vicinity of airports; (2) coordinate planning at the state, regional, and local levels; (3) prepare and adopt ALUCPs; and, (4) review the plans, regulations, and other actions of local agencies subject to ALUCPs. (Pub. Util. Code, §21674.) ALUCs are authorized and directed to prepare ALUCPs that provide for the orderly growth of public use airports and the areas surrounding such airports. (Pub. Util. Code, §21675, subd. (a).) However, as mentioned above, because John Nichol's Field is not a public use airport, the cited provisions of the State Aeronautics Act are not applicable.

2.6.2 Analysis of Project Effects and Determination as to Significance

The following significance guidelines are based on the Guidelines for Determining Significance for Hazardous Materials approved by PDS on July 30, 2007. A significant hazards or hazardous materials impact would occur if the Project:

- Is a business, operation, or facility that proposes to handle hazardous substances in excess of the threshold quantities listed in Chapter 6.95 of the California Health and Safety Code (H&SC), generate hazardous waste regulated under Chapter 6.5 of the H&SC, and/or store hazardous substances in underground storage tanks regulated under Chapter 6.7 of the H&SC, and the Project will not be able to comply with applicable hazardous substance regulations.
- Is a business, operation, or facility that would handle regulated substances subject to California Accidental Release Prevention (CalARP) Risk Management Plan requirements that, in the event of a release, could adversely affect children's health due to the presence of a school or day care within one-quarter mile of the facility.
- Is located on or within one-quarter mile from a site identified in one of the regulatory databases compiled pursuant to Government Code Section 65962.5 or is otherwise known to have been the subject of a release of hazardous substances, and, as a result the Project, may result in a significant hazard to the public or the environment.
- Proposes structure(s) for human occupancy and/or significant linear excavation within 1,000 feet of an open, abandoned, or closed landfill (excluding burnsites) and, as a result, the Project would create a significant hazard to the public or the environment.
- Is proposed on or within 250 feet of the boundary of a parcel identified as containing burn ash (from the historic burning of trash) and, as a result, the Project would create a significant hazard to the public or the environment.
- Is proposed on or within 1,000 feet of a Formerly Used Defense Site (FUDS) and it has been determined that it is probable that munitions or other hazards are located on-site that could represent a significant hazard to the public or the environment.
- Could result in human or environmental exposure to soils or groundwater that exceed USEPA Region 9 Preliminary Remediation Goals (PRG), California Environmental Protection Agency (CalEPA) California Human Health Screening Levels (CHHSL), or Primary State or Federal Maximum Contaminant Levels (MCL) for applicable contaminants, and the exposure would represent a hazard to the public or the environment.
- Will involve the demolition of commercial, industrial, or residential structures that may contain asbestos, lead-based paints, and/or other hazardous materials and, as a result, the Project would represent a significant hazard to the public or the environment.
- Is located within 2 miles of a public or public use airport or within 1 mile of a private airport, and proposes residential densities inconsistent with the *California Airport Land Use Planning Handbook*'s Safety Compatibility Criteria Guidelines for Maximum Residential Density and, as a result, the Project may result in a significant airport hazard.
- Proposes one of the following unique institutions in a dam inundation zone as identified on the inundation map prepared by the dam owner: hospital, school, skilled nursing facility, retirement home, mental health care facility, care facility with patients that have disabilities, adult and childcare facility, jails/detention facility, stadium, arena, amphitheater, any other use that would involve concentrations of people that could be exposed to death in the event of a dam failure.

- Proposes a structure or tower 100 feet or greater in height on a peak or other location where no structures or towers of similar height already exist and, as a result, the Project could cause hazards to emergency response aircraft resulting in interference with the implementation of an emergency response.
- The Project cannot demonstrate compliance with all applicable fire codes.
- A comprehensive Fire Protection Plan has been accepted and the Project is inconsistent with its recommendations.
- The Project does not meet the emergency response objectives identified in the Safety Element of the County General Plan or offer feasible alternatives that achieve comparable emergency response objectives.
- The Project proposes a BMP for storm water management or construction of a wetland, pond, or other wet basin that could create sources of standing water for more than 72 hours, and, as a result, could substantially increase human exposure to vectors, such as mosquitoes, that are capable of transmitting significant public health diseases or creating nuisances.
- The Project proposes a use that involves the production, use, and/or storage of manure or proposes a composting operation or facility and, as a result, could substantially increase human exposure to vectors that are capable of transmitting significant public health diseases or creating nuisances.
- The Project would result in a substantial increase in the number of residents located within one-quarter mile of a significant off-site vector breeding source, including, but not limited to, standing water (e.g., agricultural ponds, reservoirs) and sources of manure generation or management activities (e.g., confined animal facilities, horse keeping operations, composting operations).

2.6.2.1 Hazardous Substances Handling

Guidelines for the Determination of Significance

A significant hazards or hazardous materials impact would occur due if the Project:

- Is a business, operation, or facility that proposes to handle hazardous substances in excess of the threshold quantities listed in Chapter 6.95 of the California Health and Safety Code (H&SC), generate hazardous waste regulated under Chapter 6.5 of the H&SC, and/or store hazardous substances in underground storage tanks regulated under Chapter 6.7 of the H&SC, and the Project will not be able to comply with applicable hazardous substance regulations.
- Is a business, operation, or facility that would handle regulated substances subject to California Accidental Release Prevention (CalARP) Risk Management Plan requirements that, in the event of a release, could adversely affect children's health due to the presence of a school or day care within one-quarter mile of the facility.

Rationale for Selection of Guidelines

The significance guidelines for hazardous substances handling are from the County of San Diego Guidelines for Determining Significance – Hazardous Materials and Existing Contamination (County of San Diego, January 30, 2007), Guidelines 4.1a and 4.1b. Guideline 4.1a addresses projects that would handle hazardous substances as part of a business and is based on compliance with existing hazardous substance regulations; Guideline 4.1b addresses the potential for facilities that handle specified quantities of certain regulated substances to represent a significant hazard to children when located within one-quarter mile of a school or day care facility.

Analysis

The proposed Project does not propose any business, operation, or facility that would handle hazardous substances in excess of the threshold quantities listed in Chapter 6.95 of the H&SC or generate hazardous waste regulated under Chapter 6.5 of the H&SC. Should the proposed fire station require an underground fuel storage tank, it would be regulated under Chapter 6.7 of the H&SC; therefore, the Project would comply with applicable hazardous substance regulations. Any household hazardous materials that may result from residential development would be subject to federal, state, and local regulations. Thus, implementation of the proposed Project would not create a significant hazard to the public or the environment from on-site hazardous substance handling and impacts of the proposed Project are considered ***less than significant***.

2.6.2.2 Projects with On-Site Contamination

Guidelines for the Determination of Significance

A significant hazards or hazardous materials impact would occur if the Project:

- Is located on or within one-quarter mile from a site identified in one of the regulatory databases compiled pursuant to Government Code Section 65962.5 or is otherwise known to have been the subject of a release of hazardous substances, and, as a result the Project, may result in a significant hazard to the public or the environment.
- Proposes structure(s) for human occupancy and/or significant linear excavation within 1,000 feet of an open, abandoned, or closed landfill (excluding burnsites) and, as a result, the Project would create a significant hazard to the public or the environment.
- Is proposed on or within 250 feet of the boundary of a parcel identified as containing burn ash (from the historic burning of trash) and, as a result, the Project would create a significant hazard to the public or the environment.
- Is proposed on or within 1,000 feet of a Formerly Used Defense Site (FUDS) and it has been determined that it is probable that munitions or other hazards are located on-site that could represent a significant hazard to the public or the environment.
- Could result in human or environmental exposure to soils or groundwater that exceed USEPA Region 9 Preliminary Remediation Goals (PRG), California Environmental Protection Agency (CalEPA) California Human Health Screening Levels (CHHSL), or

Primary State or Federal Maximum Contaminant Levels (MCL) for applicable contaminants, and the exposure would represent a hazard to the public or the environment.

- Will involve the demolition of commercial, industrial, or residential structures that may contain asbestos, lead-based paints, and/or other hazardous materials and, as a result, the Project would represent a significant hazard to the public or the environment.

Rationale for Selection of Guidelines

The significance guidelines for projects with on-site contamination are from the County of San Diego Guidelines for Determining Significance – Hazardous Materials and Existing Contamination (County of San Diego, January 30, 2007), Guidelines 4.2a through 4.2f. Guideline 4.2a (first bullet) addresses the requirement that information about the location of hazardous materials release sites, included on the list prepared pursuant to Government Code section 65962.5, be disclosed in CEQA documents; Guideline 4.2b (second bullet) addresses the potential safety risks associated with occupied land uses being located near landfills; Guideline 4.2c (third bullet) addresses the potential risks from burnsites because certain locations in the County were historically used to burn trash and, as a result, these sites may be contaminated with heavy metals and/or other contaminants; Guideline 4.2d (fourth bullet) is included because the County is home to several FUDS properties that may present a hazard to the public or environment; Guideline 4.2e (fifth bullet) links the significance of site contamination to the PRGs and CHHSLs established by CalEPA and are tools for evaluating and cleaning up contaminated sites; and Guideline 4.2f (sixth bullet) addresses the potential release of hazardous substances that can occur during site construction and demolition if not properly handled and disposed.

Analysis

Known Hazardous Materials Sites

The Project site was historically used for dry farming and cattle ranching and no businesses have been conducted that involved the handling of hazardous substances in excess of the threshold quantities listed in the H&SC Chapter 6.95. As described in Section 2.6.1, a Phase I was prepared and an on-site investigation was conducted for evidence of hazardous materials and waste (Coast 2 Coast, September 11, 2009). Advanced database records searches also were conducted and did not reveal any sources of hazardous materials. The environmental database records reviewed included those sites on the list of hazardous materials sites compiled pursuant to Government Code section 65962.5. Implementation of the proposed Project would not cause a significant hazard to the public or the environment because it is not on the list of hazardous materials sites.

Furthermore, the proposed Project does not include structure(s) for human occupancy and/or significant linear excavation within 1,000 feet of an open, abandoned, or closed landfill (excluding burn sites); it is not proposed on or within 250 feet of the boundary of a parcel identified as containing burn ash (from the historic burning of trash); it is not proposed on or within 1,000 feet of an FUDS. Therefore, none of the other impact criteria were triggered. Impacts related to those issues (first through fourth bullets) are considered ***less than significant***.

Soils or Groundwater Contamination

As described earlier, no evidence of hazardous materials was found on-site during the site investigation or during the environmental database records searches. Historical aerial photographs depict dry farming on the southwestern portion of the Project site in an area where a future elementary school is planned as part of the Project. Although the historic dryland farming and potential historic pesticide use is not likely to have caused contamination, it represents a potential environmental concern in the area where the elementary school is planned due to the heightened sensitivity of children to the adverse effects of exposure to hazardous substances. To address this potentially significant impact, the existing regulations outlined in the California Education Code and the requirements of the California Department of Toxic Substances Control (DTSC) would be carried out by the Chula Vista school district prior to development of a school. DTSC's School Property Evaluation and Cleanup Division is responsible for assessing, investigating, and cleaning up proposed school sites. The Division ensures that selected properties are free of contamination or, if the properties were previously contaminated, that they have been remediated to a level that protects the students and staff who would occupy the new school. All proposed school sites that receive state funding for acquisition or construction are required to go through a rigorous environmental review and cleanup process under DTSC's oversight. These requirements ensure that the site would be safe for school children prior to construction of a school. Because there is no evidence of historic pesticide use on this portion of the Project site, and because the existing regulatory structure (with DTSC oversight) ensures that the site would be safe for school children, this potential impact is considered ***less than significant***.

2.6.2.3 Airport Hazards

Guidelines for the Determination of Significance

A significant airport hazards impact would occur if the Project:

- Is located within 2 miles of a public or ~~public~~ private use airport or within 1 mile of a private airport, and proposes residential densities inconsistent with the *California Airport Land Use Planning Handbook*'s Safety Compatibility Criteria Guidelines for Maximum Residential Density and, as a result, the Project may result in a significant airport hazard.

Rationale for Selection of Guidelines

The significance guideline set forth above is from the County of San Diego Guidelines for Determining Significance – Airport Hazards (County of San Diego, July 30, 2007), Guideline 4.2.

As previously noted, the State Aeronautics Act and *Handbook* do not apply to private use airports. However, the County utilizes the *Handbook* as a benchmark for assessing a project's environmental significance, and the *Handbook* notes that, relative to private use airports, responsibility for airport land use compatibility planning falls to local governments. (*Handbook*, p. 3-28.) The *Handbook* states that local governments "should consider potential safety issues with regards to development near" private airports and "deliberate on, at a minimum, the safety

guidance appropriate for the environment in which the airport is located (as outlined in Chapter 4 of this *Handbook*)." (*Ibid*.)

Accordingly, the analysis below uses the *Handbook*'s guidance – and specifically the direction provided regarding the delineation of geometric safety zones and maximum residential density criteria – as a method to assess the environmental significance of the proposed Project relative to existing airfield hazards. The analysis below also considers whether the proposed Project is consistent with the *Handbook*'s guidance regarding the minimum "open land" percentages within safety zones in which Project-related development would occur.

Analysis

To begin, due to the location of the Project site relative to the airfield (see **Figure 1.0-13**), the Project would only be affected by aircraft activity at the western end of the airfield's primary runway. Further, because operations at the airfield almost exclusively proceed in an east-to-west direction, only takeoffs/departures[15] from the airfield's western end are of concern in conducting the compatibility analysis for the proposed Project. Moreover, once aircraft leave the ground during takeoff/departure, the executed flight pattern immediately takes aircraft away from the Project site. Aircraft taking off from Runway 9-27 turn slightly to the left upon lift-off to climb-out over the eastern arm of Lower Otay ~~Lake~~Reservoir. Finally, because of their very light weight and very slow flying speed, ultralights are highly unlikely to pose a significant threat to anyone on the ground; as such, the focus of the analysis is on jump plane activity.

With that context, Chapter 4 of the *Handbook* contains safety criteria to facilitate compatibility assessments of proposed residential densities with proximate aeronautical uses. These criteria apply to six safety compatibility zones identified in the *Handbook* that, in most respects, reflect the different phases of aircraft operations associated with departures and arrivals:

Zone 1:	Runway protection zone and object free area.
Zone 2:	Inner approach/departure zone.
Zone 3:	Inner turning zone.
Zone 4:	Outer approach/departure zone.
Zone 5:	Sideline zone.
Zone 6:	Traffic pattern zone.

To assess the compatibility of the proposed Project's residential densities with those permitted by the *Handbook*, the geometric parameters of these six zones were delineated around John Nichol's Field in accordance with the *Handbook*'s guidance on safety zone configuration. (*Handbook*, pp. 3-15 to 3-25; see also **Appendix C-201**.) A graphical depiction of the zone configuration for John Nichol's Field is provided in **Figure 2.6-1**.

Utilizing the airfield's zone configuration to identify the relevant areas of interest for purposes of airport hazards, **Table 2.6-1** compares the residential densities contemplated by the proposed Project with those allowed by the *Handbook* on a zone-by-zone basis. **Table 2.6-1** utilizes the

[15] Because arrivals/landings occur at the airfield's eastern end, such operations do not present a compatibility concern relative to the Project site.

Handbook's clustering guidance due to the adjacency of the Project site to publicly-owned and preserved offsite land, which results in a clustering effect whereby substantial areas of "open land" are available to accommodate aircraft in distress. The application of clustering densities in this case is consistent with the *Handbook*, which describes clustering as the situation where "most of the buildings and other facilities are … concentrated in one portion of the site, leaving other areas as open space because of terrain, environmental, or other considerations." (*Handbook*, p. 4-27.)

As illustrated in **Table 2.6-1**, the proposed Project's densities, when properly viewed in combination with offsite land areas, are consistent with the densities permitted by the *Handbook* for clustered residential land uses. The *Handbook* recognizes that clustering, as opposed to the spreading of development, can be utilized to provide aircraft in distress with substantial "open land" upon which to execute an emergency landing. (*Handbook*, pp. 4-27 to 4-28, and 4-33.) As illustrated in **Figure 2.6-1**, the residential development contemplated by the proposed Project essentially is clustered, for purposes of the *Handbook*, because the project site is adjacent to publicly-owned land dedicated to habitat preservation and conservation, thereby resulting in a clustered effect. Specific to Safety Zone 4, for example, **Figure 2.6-1** shows that proposed development is concentrated in the northern portion of the zone dimensions, leaving the southern portion of Zone 4 – where most of the flight tracks are located – completely undeveloped.

In addition to recommending the maximum residential densities presented in **Table 2.6-1**, the *Handbook* also sets forth guidance for minimum "open land" requirements within the safety zones. As characterized by the *Handbook*, "open land" should be "long, level, and free of obstacles" that potentially could send an aircraft in distress out of control. (*Handbook*, p. 4-31.) As a "general guideline, open land sites should be at least 300 feet long by 75 feet wide (about 0.5 acre or the size of a football field)." (*Ibid*.) Roads, parking lots, and recreational areas all can be utilized as "open land" areas. (*Ibid*.)

Figure 2.6-2 illustrates the areas within Zones 2, 3, and 4 that qualify as "open land" – capable of accommodating emergency landings – for purposes of the *Handbook*. **Table 2.6-2** below quantifies the areas of qualifying "open land," as defined for purposes of the *Handbook*, for each safety zone within which the proposed Project contemplates development (zones 2, 3, and 4), and assesses whether the percentage of qualifying "open land" within each zone is consistent with the *Handbook*'s recommendations for the minimum amount of "open land" within each zone. Both **Figure 2.6-2** and **Table 2.6-2** were informed by Project-related vegetation surveys, which studied whether the offsite land owned by the City of San Diego's ~~Water~~ Public Utilities Department, located south of the Project site, is conducive to emergency landings and does not contain any obstructions to emergency landings, such as large trees.[16]

As shown in **Figure 2.6-2** and **Table 2.6-2** below, sufficient quantities of "open land," including designated preserve lands in the City of San Diego's *MSCP Subarea Plan*, are located in the safety

[16] In October 2013, a Dudek biologist undertook a site visit in order to assess whether the existing vegetation communities qualify as "open land" pursuant to the *Handbook*'s criteria. Based on the biologist's survey efforts, the adjacent property located within the *MSCP Subarea Plan* contains a variety of vegetation communities, including coastal sage scrub, southern willow scrub, tamarisk scrub, freshwater marsh, herbaceous wetland, and disturbed habitat. The qualifying "open land" identified in **Figure 2.6-2** *excludes* areas identified during the biologist's survey as being occupied by impediments to managing an aircraft distress, including trees of sizable height or circumference; uneven, sloped topography; open water; and, the creek area and its bed.

zones at the airfield's western end in which the proposed Project contemplates development. Relatedly, the Project site – in its existing condition – does not satisfy the *Handbook*'s criteria for "open land" due to topographical attributes. As such, build out of the Project site would not eliminate qualifying, existing "open land" that could be utilized by aircraft in distress. Rather, as illustrated in **Figure 2.6-1**, Otay Lakes Road – a component of the proposed Project – is sufficiently sized (i.e., 34-foot paved width, and a 60-foot right-of-way) to create an "open land" area that is capable of accommodating an emergency landing and is suitably located at the Project site's perimeter.

Also of note, the clustering concept has been utilized by the San Diego County ALUC in all of its adopted ALUCPs. For example, in Policy AGU.2.4(c) of the *Agua Caliente Airport Land Use Compatibility Plan* (adopted Dec. 2006; amended Dec. 2011), the San Diego County ALUC provided for the following residential development criteria:

> In Safety Zones 3 and 4, new residential development at a density greater than 8.0 dwelling units per acre is incompatible. A density of 4.0 dwelling units per acre or less is compatible. In the range of more than 4.0 but less than 8.0 dwelling units per acre, new development is conditioned upon the building sites being clustered in a manner that maximizes the open land on which an aircraft could execute an emergency landing.

Further, the San Diego County ALUC mandates clustering for project sites equaling or exceeding 10.0 acres.[17] While not dispositive for purposes of this assessment, the proposed Project is consistent with the residential densities permitted by the San Diego County ALUC.

In light of the above, the proposed Project is consistent with the *Handbook*'s residential density and "open land" criteria and, therefore, impacts related to airport hazards would be considered ***less than significant***. The conclusion that impacts related to airport hazards would not be significant is consistent with the substantial amount of "open land" within the airfield's vicinity that is available to accommodate aircraft in distress; the typical departure route utilized by aircraft operating at the airfield, which turns away from the Project site; and, the type of operations conducted at the airfield, which either consist of aircraft operated by professional pilots for skydiving purposes or ultralight aircraft that are highly unlikely to pose a significant threat to on the ground conditions.

[17] See also the San Diego County ALUC's *Borrego Valley Airport Land Use Compatibility Plan* (adopted Dec. 2006; amended Dec. 2011), Policy BOR.2.4; *Brown Field Municipal Airport Land Use Compatibility Plan* (adopted Jan. 2010; amended Dec. 2010), Policy 3.4.4; *Fallbrook Community Airpark Land Use Compatibility Plan* (adopted Dec. 2006; amended Dec. 2011), Policy FA.2.4; *Gillespie Field Airport Land Use Compatibility Plan* (adopted Jan. 2010; amended Dec. 2010), Policy 3.4.4; *Jacumba Airport Land Use Compatibility Plan* (adopted Dec. 2006; amended Dec. 2011), Policy JAC.2.4; *McClellan-Palomar Airport Land Use Compatibility Plan* (adopted Jan. 2010; amended Dec. 2010), Policy 3.4.4; *Montgomery Field Airport Land Use Compatibility Plan* (adopted Jan. 2010; amended Dec. 2010), Policy 3.4.4; *Oceanside Municipal Airport Land Use Compatibility Plan* (adopted Jan. 2010; amended Dec. 2010), Policy 3.4.4; *Ocotillo Airport Land Use Compatibility Plan* (adopted Dec. 2006; amended Dec. 2011), Policy OCO.2.4; *Ramona Airport Land Use Compatibility Plan* (adopted Dec. 2006; amended June 2008 and Dec. 2011), Policy RMO.2.4. These ALUCPs hereby are incorporated by reference pursuant to CEQA Guidelines section 15150, and available for public review and inspection at the following website: http://san.org/sdcraa/airport_initiatives/land_use/adopted_docs.aspx (last visited Feb. 26, 2013).

2.6.2.4 Emergency Response Plans

Guidelines for the Determination of Significance

A significant impact to emergency response plans would occur if the Project:

- Proposes one of the following unique institutions in a dam inundation zone as identified on the inundation map prepared by the dam owner: hospital, school, skilled nursing facility, retirement home, mental health care facility, care facility with patients that have disabilities, adult and childcare facility, jails/detention facility, stadium, arena, amphitheater, any other use that would involve concentrations of people that could be exposed to death in the event of a dam failure.
- Proposes a structure or tower 100 feet or greater in height on a peak or other location where no structures or towers of similar height already exist and, as a result, the Project could cause hazards to emergency response aircraft resulting in interference with the implementation of an emergency response.

Rationale for Selection of Guidelines

The significance guidelines for emergency response plans are from the County of San Diego Guidelines for Determining Significance – Emergency Response Plans (County of San Diego, July 30, 2007), Guidelines "a" and "b." Guideline "a" (first bullet) is used to evaluate proposed projects for the types of uses that could adversely affect the implementation of a dam evacuation plan; Guideline "b" (second bullet) was developed based on guidance from the County Sheriff's Aerial Support Detail (ASTREA) for evaluation of the placement of large towers in locations that could impact efficient low flight patterns during emergency air response.

Analysis

The Project site is not designated as a dam inundation zone and no structure or tower 100 feet or greater in height is proposed by the Project. Therefore, the proposed Project would have ***no impact*** on emergency response plans.

2.6.2.5 Exposure to Wildland Fires

Guidelines for the Determination of Significance

A significant impact from exposure to wildland fires would occur due to the following:

- A comprehensive Fire Protection Plan has been accepted and the Project is inconsistent with its recommendations.
- The Project cannot demonstrate compliance with all applicable fire codes.
- The Project does not meet the emergency response objectives identified in the Safety Element of the County General Plan or offer feasible alternatives that achieve comparable emergency response objectives.

Rationale for Selection of Guidelines

The significance guidelines for exposure to wildland fires are from the County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements – Wildland Fire and Fire Protection (County of San Diego, August 31, 2010), Guidelines 1 through 3, for projects located within a wildland/urban interface (WUI). Guideline 1 (first bullet) is based on compliance with all applicable fire codes and the requirement that all discretionary projects are required to prepare an FPP and ensure that impacts resulting from wildland fire hazards have been adequately mitigated; Guideline 2 (second bullet) applies to all projects that are required to model fire behavior in mature vegetation on and near the site as part of its FPP based on site topography, fuel loads, atmospheric conditions, and fire intensity; and Guideline 3 (third bullet) is based on the need to have adequate fire services available and to provide a Project Facility Availability Form (DPLU Form #399F) that is completed and signed by the fire protection service provider prior to formally submitting the application to the County.

Analysis

Preparation of a Fire Protection Plan

The potential for wildland fire hazards in and around the Project site is high because planned open spaces and off-site areas are sparsely covered with chaparral and other vegetation, which, when coupled with the seasonal hot and dry conditions in the area, have the potential to create fuel for wildland fires. In addition, a substantial portion of the Project site would be preserved as open space/Preserve. Thus, wildlands would be adjacent to urbanized or residential areas. However, the proposed Project includes an **FPP Appendix C-21**, as required by Chapter 47 of the County Consolidated Fire Code.

The FPP includes a fire risk assessment that is based on field data collection and fire behavior modeling to document the type and intensity of fire that would be expected on the Project site given characteristic site features such as topography, vegetation, and weather. Fire behavior modeling uses site-specific information to create modeled representations of how wildfire would move through available fuels on a given site and to objectively predict flame lengths and intensities. **Figure 2.6-3 and 2.6-4** shows the results of a Geographic Information System (GIS)-based fire-behavior software application that graphically portrays the fire behavior during summer and fall fires under existing site conditions and following application of fire management strategies identified in the FPP that would be implemented as Project mitigation measures.

A worst-case summer fire would result in a fire spreading at a rate of up to 1.1 mph with flame lengths of 21 feet. During a typical fall fire with gusty Santa Ana winds and low fuel moisture, fire is expected to be moderately fast, moving at up to 2.3 mph with highest flame length values reaching approximately 31 feet. Spotting is projected to occur up to nearly 1 mile during a summer fire and nearly 2.5 miles during a fall fire.

During a typical fall fire with gusty Santa Ana winds and low fuel moisture, fire is expected to be moderately fast, moving at up to 1.1 mph, with longest flame length values reaching approximately 18 feet. To replicate a catastrophic wildfire scenario, 50 mph winds were introduced for the

fall/winter model scenario. The resulting extreme weather flame lengths are projected to be 46 feet. Based on this result, 100-foot vegetation management zones for the Project perimeter and planting restrictions are established for the entire project site.

These modeling results were used to support analysis and calculation of the size and composition of recommended vegetation management zones, in which flammable vegetation, continuous fuel beds, and ornamental shrubbery would be removed, reducing the intensity of approaching fire and helping to reduce the likelihood of a structural fire spreading into naturally vegetated areas.

Modeling of post-treatment conditions shown in **Figures 2.6-3 and 2.6-4** are based on a custom fuel model that was used to represent the anticipated irrigated landscape condition present in the Project's fuel modification areas and to mimic the irrigated, exotic landscape commonly found in the wildland/urban interface in southern California. For the Project, two variations of fuel bed depth values were used in modeling the fuel modification areas. Depth values were based on recommended fuel modification area requirements (4-inch height for Zone A, 6-inch height for Zone B) based on the proposed hydroseed mix to be used in revegetating manufactured slopes. The proposed hydroseed mix for the Project would consist primarily of grass species, with lesser quantities of native shrubs commonly associated with coastal sage scrub habitat types, resulting in a lower fuel landscape.

As illustrated for the Post Treatment Site Conditions in **Figures 2.6-3 and 2.6-4**, the 46-foot flame lengths predicted during pre-treatment modeling of extreme weather scenarios are significantly reduced to less than 10 feet at the outer edges of the fuel modification areas, and to less than 5 feet by the time the inner portions of the fuel modification areas are reached. Similar reductions are observed during less extreme summer weather conditions.

The benefit provided by fuel modification zones is a reduction in the fire intensity and radiant and convective heat to which a structure would otherwise be exposed. This significant reduction in fire intensity does not mitigate the effect of flying embers, which may travel one mile or more during wind-driven fires. Most recently adopted building and fire codes were specifically enacted to reduce the potential for flame and ember penetration, which are leading causes for structural losses during wildfires.

Given the characteristics of climate, vegetation, location, topography, and fire history, the Project site is considered vulnerable to wildfire starting in, burning onto, or spotting onto the site. This is especially the case due to the large amount of naturally vegetated open space that would be preserved adjacent to the site. Under worst-case fall weather conditions, there would be the potential for fire to move rapidly through the Project site's native fuel types. The most common type of fire anticipated in the vicinity of the Project area would be a wind-driven brush fire from the north-northeast during the fall, with flame lengths reaching nearly 50 feet. The rate of spread would be rapid due to volatile fuels, wind, and low fuel moisture. A typical cause may be related to roadways (tossed cigarette, vehicle accidents, or vehicle fire), or agricultural tractor work, welding, open burning, arson, or fireworks discharged in the area.

Compliance with Applicable Fire Codes

As described in Section 4.4 of the FPP, the Project would be constructed in compliance with the 2014 County Consolidated Fire Code and 2013 County Building Code, Part 2.5 – 2013 California Residential Code, ~~,~~and Part 9 – 2013 California Fire Code for new development in the wildland-urban interface (WUI). This would include ignition resistant construction for all structures, including exterior walls of non-combustible (stucco, masonry, or approved cement fiber board) or ignition resistant material from surface of the ground to the underside of the roof system. Eaves, soffits, vents, roofs, and window frames would be constructed utilizing similar fire resistant construction techniques and materials and designed to avoid any gaps that would allow intrusion by flames or embers. All exterior glazing in windows and doors are to be tempered glass or glass block and have a 20-minute fire rating. Similar standards would apply to doors, decks, and storage sheds. Lots on the perimeter of the Project site would require 6-foot-high walls constructed with solid masonry or other solid non-combustible materials; and no wood fences are permitted within 5 feet of structures on any lots. Spark arrestors are required on all chimneys, vents on heating appliances, outdoor fireplaces, and permanent barbeques and grills.

Fire protection systems under the applicable fire and building codes include vegetation management and fire suppression infrastructure. These standards address County Fire Code standards for water supply, including fire hydrant spacing, residential waterline distribution system capable of providing fire flows of at least 2,500 gallons per minute. All structures will have internal fire sprinklers, though exceptions can be granted by the fire district for sheds under 200 square feet. In addition, all systems other than single-family detached dwelling units will be remotely monitored by an approved 24/7 alarm company.

Additional site and structural design standards for the Resort complex and commercial buildings are intended to facilitate fire equipment access without obstructions, which would include two fire access/evacuation routes, two points of fire truck access to applicable structures, approved fire truck turnarounds, and enclosed, fire-rated stairways to all floors for firefighter access. Specific infrastructure requirements for the Resort include fire hydrant spacing, fire extinguishers, fire-extinguishing systems in restaurants, manual fire alarms and supervised smoke detection, and an emergency announcement system.

Fire Department Response Capabilities

As described in Section 3.6.1 of this EIR, the County's 5-minute travel time standard for Otay Ranch is applied to the Project's proposed land uses. The FPP concludes that, without additional fire facilities, the ~~San Diego Rural Fire Protection District (RFPD)~~SDCFA could not meet the County's standard travel time because the nearest ~~RFPD~~ SDCFA facility is located approximately 14 minutes from the Project site at 14024 Peaceful Valley Ranch Road.

The Fire Protection Plan proposes that the Project site be served on an interim basis by a temporary, on-site ~~RFPD~~ SDCFA fire station to be located within the Project's Western development area at either the Multiple Use area or another flat suitable site such as the P-1 park site. This temporary fire station will be established prior to the issuance of the first building permit. **Figure 2.6-5A** shows the temporary ~~RFPD~~ SDCFA locations and a 5-minute travel time threshold.

Prior to the issuance of the first building permit in the Eastern development area, a permanent, on-site ~~RFPD~~ SDCFA fire station would be constructed and be operational on the Project's Public Safety Site. The Public Safety Site reserved within the Project would provide adequate space for a station sufficient to serve the Project site within the General Plan Safety Element travel time threshold of five minutes. **Figure 2.6-5B** shows the Public Safety Site and a 5-minute travel threshold. ~~RFPD's~~ SDCFA's facility requirements for the fire station would include housing for four on-duty firefighters and reserve personnel, office space, training room and meeting rooms, and adequate space for any necessary equipment.

Community Protection and Evacuation Plan

As stated in the FPP, the Project applicant is required to have a qualified fire specialist prepare a Community Protection and Evacuation Plan (CPEP) for the Project in accordance with the requirements of the Fire Authority Having Jurisdiction (FAHJ) and approved by the FAHJ and San Diego County Fire Marshal prior to occupancy of any dwelling units in the first phase of Project development. The CPEP uses existing information from the County Office of Emergency Services (OES) that directs CPEP preparers through the various required components, as described on the OES website (OES 2010). Appropriate fire authorities and law enforcement personnel would participate in the preparation of the CPEP. The CPEP would provide site-specific procedures for various emergency situations, including wildfire, and would be made available to Otay Ranch residents and resort and commercial tenants. The CPEP should be reviewed by residents at least annually through organized meetings and educational outreach by the HOA, Community Services District (CSD), or other means.

Among the important concepts that would need to be included in the CPEP are hazard identification, description of the area's environment, mitigation strategies, law enforcement, fire agencies and contact information, homeowner education materials, preparedness checklist, route planning, and Project-specific procedures for early relocation and last resort site sheltering.

Otay Ranch residents and occupants of commercial and resort facilities would also need to be provided on-going education regarding wildfire, the CPEP, and the FPP's requirements. This educational information would support the Otay Ranch fire safety. Informational handouts, a community website page, mailers, fire safe council participation, inspections, seasonal reminders, and resort check-in handouts are methods that may be used to disseminate wildfire and relocation awareness information. The resort facility would need to include information for visitors at check-in and also exit instructions, typically located on the back of hotel room doors. All such informational and educational materials would be reviewed by the FAHJ to ensure consistency with relevant policies and procedures.

The potential for wildland fire hazards in and around the Project site is high because planned open spaces and off-site areas are sparsely covered with chaparral and other vegetation, which, when coupled with the seasonal hot and dry conditions in the area, have the potential to create fuel for wildland fires. As stated above, the Project would be constructed in compliance with all applicable fire codes, the applicant has caused an FPP to be prepared and compliance with the FPP would be assured during building permit review by the FAHJ and San Diego County Fire Authority, and an on-site temporary and permanent fire station would ensure compliance with emergency travel time requirement. As a result, the Project would have **a *less than significant impact*** due to wildfires.

2.6.2.6 Exposure to Vectors

Guidelines for the Determination of Significance

A significant impact from exposure to vectors would occur if the Project:

- Proposes a BMP for storm water management or construction of a wetland, pond, or other wet basin that could create sources of standing water for more than 72 hours, and, as a result, could substantially increase human exposure to vectors, such as mosquitoes, that are capable of transmitting significant public health diseases or creating nuisances.
- Proposes a use that involves the production, use, and/or storage of manure or proposes a composting operation or facility and, as a result, could substantially increase human exposure to vectors that are capable of transmitting significant public health diseases or creating nuisances.
- Would result in a substantial increase in the number of residents located within one-quarter mile of a significant off-site vector breeding source, including, but not limited to, standing water (e.g., agricultural ponds, reservoirs) and sources of manure generation or management activities (e.g., confined animal facilities, horse keeping operations, composting operations).

Rationale for Selection of Guidelines

The significance guidelines for exposure to vectors are from the County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements – Vectors (County of San Diego, January 15, 2009), Guidelines 4.1 through 4.3. Guideline 4.1 (first bullet) is included to recognize that sources of standing water, particularly where the water would be standing for more than 72 hours, provides excellent habitat for mosquito breeding; Guideline 4.2 (second bullet) is included because areas of concentrated manure and composting operations and facilities typically require careful management to minimize vector production; and Guideline 4.3 (third bullet) addresses the potential for a project to result in a substantial increase in the number of residents located near an existing off-site vector breeding source.

Analysis

Exposure to Vectors from Storm Water Management Basins

As described in Section 3.2, Hydrology and Water Quality, the Project proposes 15 water quality basins in the form of bioretention basins and roadside bioretention swales designed to provide treatment of the 85th percentile (0.65 inch) of rainfall runoff at the Project site prior to discharge to Lower Otay ~~Lake~~Reservoir. To address this requirement, the water quality basins would be located adjacent to Otay Lakes Road, upstream of culverts designed to drain the developed areas of the Project site. The basins would contain diversion weirs designed to detain the runoff water for between 24 and 48 hours in the lower chamber of the water quality basin, allowing sediments and pollutants to settle and filter through the heavy vegetation. Runoff in excess of the 85th

percentile runoff (deemed to be clean water) would overtop the diversion weir and drain to Lower Otay ~~Lake~~ Reservoir through the proposed storm drain culverts. More detailed information on the basins is provided in Section 3.2.

Maintenance of the water quality basins would be the responsibility of the property owner until such time as the assessment district/mechanism takes over the responsibility of the water quality basins and the County assumes maintenance responsibility of the bioretention swales within the public right of way. Periodic inspections would be performed following each significant storm (defined as 24-hour rainfall events in excess of 1 inch). The inspections would include checks for structural integrity of the basins and their outlet devices. The inspector would identify any repairs and maintenance activities deemed necessary, including the removal of trash, debris, and sediment from the upper chamber of the basin area. All riser orifices and weir box overflows would be unclogged during the periodic and post-rainfall inspections. Sediment would be removed to maintain the designed volume of storage in the basin. A registered civil engineer would also conduct semi-annual inspections of each water quality basin to provide a thorough inspection of the basin area, and to identify any required repairs or corrective maintenance activity needed to maintain the hydraulic performance of the basins. Semi-annual maintenance activities would include removal of the heavy vegetation that would inevitably grow in the basin. Roughly one-half of the vegetation would be removed from the basin at each annual maintenance session, including all woody or aquatic vegetation and other obstructions to flow.

Although inspection and maintenance of the basins would maintain their structural and storm water storage and discharge design standards, the potential would exist for the basins to increase human exposure to health vectors such as mosquitoes. This exposure to vectors would be a ***potentially significant impact*** (**Impact HZ-1**).

Exposure to Vectors from On-Site Manure or Composting Operations

The Project proposes residential, resort, school, parks, and open space land uses, and would not include any facilities involving the production, use, and/or storage of manure or a composting operation. Therefore, there would be ***no impact*** from exposure to vectors from manure or compost operations.

Exposure of Residents to Off-Site Vector Sources

Currently, the Project site is undeveloped and unoccupied and does not support any significant vectors, such as mosquitoes, rats, or flies. No properties within one-quarter mile of the Project contain agricultural ponds, confined animal facilities, or other vector-breeding sources. In addition, the proposed Project does not propose any activities, such as equestrian facilities, that would support vectors or facilitate an increase of vectors in the Project site. However, most of the Project residences would be located within one-quarter mile of the Upper or Lower Otay ~~Lakes~~Reservoir. The ~~Lakes~~ reservoir are owned and managed by the City of San Diego Public Utilities Department and regular changes in water elevations, presence of fish and birds as predators, wind waves, and fishing boat turbulence avoid conditions for creation of stagnant pools of water that would be mosquito breeding sources, which require a week of standing water conditions to complete the mosquito larvae breeding cycle. The County Department of Environmental Health identifies

typical conditions of standing water necessary for mosquito breeding, and streams, lakes, and reservoirs are not included as typical sources. In addition, the significance guideline for exposure to vectors requires that water features proposed by the Project be evaluated. Therefore, the potential for exposure to vectors from Otay ~~Lakes~~ Reservoirs would not be a significant impact resulting from the proposed Project. Because implementation of the proposed Project would not cause an increase in residents exposed to vector-breeding sources, impacts related to vector exposure are considered ***less than significant***.

2.6.3 Cumulative Impact Analysis

The geographic scope for cumulative impacts related to hazards and hazardous materials includes the unincorporated portions of San Diego County and the City of Chula Vista bounded by I-805 to the west, Main Street to the south, Campo Road to the east, and SR-54 to the north.

The Otay Ranch PEIR cumulative impact analysis of hazards identified only impacts associated with the future use, transport, and storage of hazardous materials and determined that compliance with applicable laws and regulations would avoid a significant impact. ***No cumulative impacts*** associated with airport operations, emergency response plans, exposure to wildland fires, or exposure to vectors were addressed in the PEIR.

At a Project level, potential impacts related to hazards and hazardous materials are addressed and mitigated on a site-specific basis. The potential for significant cumulative impacts related to hazards and hazardous materials would be based on whether implementation of the proposed Project would contribute to local or regional impacts from hazards and hazardous materials. The analysis in this chapter determined that the Project's impact associated with handling of hazardous materials, on-site contamination, airfield operations, emergency response plans, and exposure to wildland fires would be either ***less than significant or no impact***. Human exposure to vectors would be potentially significant and mitigation measure M-HZ-1 is identified to mitigate potential Project impacts.

To address the potential risk for hazards related to wildland fires, the proposed Project includes an FPP, as discussed above in Section 2.6.2.5. The FPP identifies measures to be implemented to reduce wildfire impacts, and procedures to be followed to educate and prepare residents and occupants of actions to be taken in the event of a potentially dangerous wildfire condition. However, in viewing the potential regional impact from wildland fires, the County General Plan Update EIR determined that the General Plan Update would contribute to a cumulatively considerable impact from wildland fires. Implementation of the FPP and mandatory Project compliance with applicable existing fire codes would reduce the potential for the Project to be impacted by wildland fires to below a level of significance. Further, the Project will only generate demand for a portion of the typical number of calls for service from a fire station. As such, the anticipated fire station will have capacity to respond to calls for service from other areas around the project site. The reduction in residential units in Village 15 will further reduce demand for fire protection services from the planned fire station. Thus, the proposed Project would ***not result in a cumulatively significant impact*** related to the risk of wildland fires.

Proposed water quality basins may cause an increased human exposure to vectors such as mosquitoes and mitigation measure M-HZ-1 has been identified to reduce the Project's impact to less than significant. In addition, as stated in Section 2.6.2.6 of the EIR, the only potential off-site source of vectors within one-quarter mile of the Project are the Otay ~~Lakes~~Reservoirs, which were determined to not be a source of stagnant pools of water that would breed mosquitoes. Therefore, the proposed Project would ***not contribute to a cumulatively considerable impact*** associated with vectors.

2.6.4 Significance of Impacts Prior to Mitigation

The following significant impacts were identified in the analysis of the Project's effects related to hazards and hazardous materials:

Impact Number	Description of Project's Effect	Significance of Impact
HZ-1	Proposed storm water retention basins may cause an increased human exposure to health vectors such as mosquitoes.	Potentially significant ~~cumulative~~ impact.

2.6.5 Mitigation

The following mitigation measures are recommended to reduce the potentially significant Project impacts to a less than significant level:

M-HZ-1a Project grading and improvements plans shall be reviewed by the Director of Public Works to determine that water quality basins are designed to drain within 72 hours and include a mechanism to open a flap gate or similar manual device if the drain time becomes too long. Manual drainage shall be conducted if water is held beyond 72 hours. Routine and semi-annual inspections shall include modification of orifice drain holes, if needed, to provide for optimum performance and suitable drain time.

M-HZ-1b The Director of Public Works shall determine the design of the water quality basins include rip-rap fields at inlet scour-protection points to be self-draining concurrent with the processing of grading and improvement plans.

M-HZ-1c Routine and semi-annual water quality basin inspections to the satisfaction of the Director of Public Works shall include removal of accumulated trash and debris that may capture and hold rainwater or runoff, or that accumulates around the outlet riser pipe or discharge orifice; repair of erosion or low-lying areas where ponding of water develops; identification and elimination of possible vector harborage or burrowing rodent activity; inspection for sufficient vegetation coverage for basin side slopes and floor; reduction of vegetation height to minimize insect harborage, with the height of ground cover grasses reduced to a maximum height of 6 inches; investigation and elimination or minimization of upstream dry season flow sources

if dry season flows are persistent and lead to constant ponding; and notification of San Diego County Vector Control if sources are from off-site properties.

2.6.6 Conclusion

2.6.6.1 *Hazardous Substances Handling*

The proposed Project does not propose any business, operation, or facility that would handle hazardous substances or generate household hazardous waste in excess of the threshold quantities of the H&SC. Should the proposed fire station require an underground fuel storage tank, it would be regulated under the H&SC. Thus, implementation of the proposed Project would not create a significant hazard to the public or the environment from on-site hazardous substance handling and impacts of the proposed Project are considered ***less than significant***.

2.6.6.2 *Projects with On-Site Contamination*

A Phase I was prepared and database records searches were conducted, which did not reveal any sources of hazardous materials. Implementation of the proposed Project would not cause a significant hazard to the public or the environment because it is not on the list of hazardous materials sites. With regard to the site where the elementary school is planned due, existing regulations in the California Education Code and the requirements of the California DTSC would be carried out by the Chula Vista school district prior to development of a school. Thus, the potential impact from existing on-site contamination is considered ***less than significant***.

2.6.6.3 *Airport Hazards*

The proposed Project's residential densities, in combination with offsite "open land" areas, are consistent with the maximum residential densities allowed by the *Handbook* for clustered development designs. Therefore, the proposed Project's impacts to airport hazards impacts would ***not be significant***.

2.6.6.4 *Emergency Response Plans*

The Project site is not designated as a dam inundation zone and no structure or tower 100 feet or greater in height is proposed by the Project. Therefore, the proposed Project would have ***no impact*** on emergency response plans.

2.6.6.5 *Exposure to Wildland Fires*

In accordance with the FPP for the Project, a temporary, on-site ~~RFPD~~ SDCFA fire station to be located within the Project's Western development area on an interim basis prior to first certificate of occupancy. Prior to the issuance of the first building permit in the Central or Eastern development areas, a permanent on-site ~~RFPD~~ SDCFA fire station would be constructed and be operational on the Project's Public Safety Site. Therefore, the proposed Project would have ***a less than significant impact*** due to wildfires.

2.6.6.6 *Exposure to Vectors*

Proposed storm water retention basins may cause an increased human exposure to health vectors such as mosquitoes (**HZ-1**). To address this potential impact, mitigation measure M-HZ-1a through 1c would require design, inspection, and maintenance of the water quality basins to minimize the potential for the basins to become a source of health vectors. Therefore, the proposed Project ***would not result in any significant impacts*** related to exposure to vectors.

Table 2.6-1
Assessment of the Proposed Project's Consistency with the Densities Permitted by the *Handbook*

Safety Zone	Number of Proposed Residential Units	Acreage within Zone[a]	Average Density	*Handbook* Clustered Permitted Density[b]	Consistent?
Zone 1[c]	0	N/A	0	0	N/A
Zone 2	7	54.0	0.13 unit/ 1 acre	1 unit/ 1–5 acres	Yes
Zone 3	10	36.1	0.28 unit/ 1 acre	1 unit/ 1–5 acres	Yes
Zone 4	41	28.8	1.42 units/ 1 acre	3–5 units/ 1 acre	Yes
Zone 5[c]	0	N/A	0	1 unit/ 1–2 acres	N/A
Zone 6[c]	N/A	N/A	N/A	No Restrictions	N/A

Table Notes:

[a] The "Acreage within Zone" quantities include off-site land that is located south of the Project site and within the safety zones, and that is part of the City of San Diego's *Multiple Species Conservation Program (MSCP) Subarea Plan* (March 1997), which is available for public review and inspection at http://www.sandiego.gov/planning/programs/mscp/docsmaps/index.shtml (last visited May 23, 2013). The subject off-site land located south of Otay Lakes Road is owned by the City of San Diego's ~~Water~~ Public Utilities Department and is referred to in the MSCP Subarea Plan as the Otay ~~Lakes~~ Reservoirs component of the "Cornerstone Lands." According to the City's MSCP Subarea Plan, this off-site land will be protected as habitat lands and an open space corridor through conservation easements (City of San Diego MSCP Subarea Plan [March 1997], pp. 28 and 29, 35.)

[b] The "*Handbook* Clustered Permitted Density" quantities are based on Table 4F: Safety Compatibility Summary in the *Handbook*, specifically Sample Policy 2: Clustering (p. 4-33).

[c] Zones 1 and 5 are described as "N/A" because the Project does not contemplate development within any of these safety zones. Zone 6 is also described as "N/A" as there are no restrictions on density pursuant to the *Handbook*.

Table 2.6-2
Assessment of the Proposed Project's Consistency with the *Handbook*'s Guidelines for Extent of "Open Land"

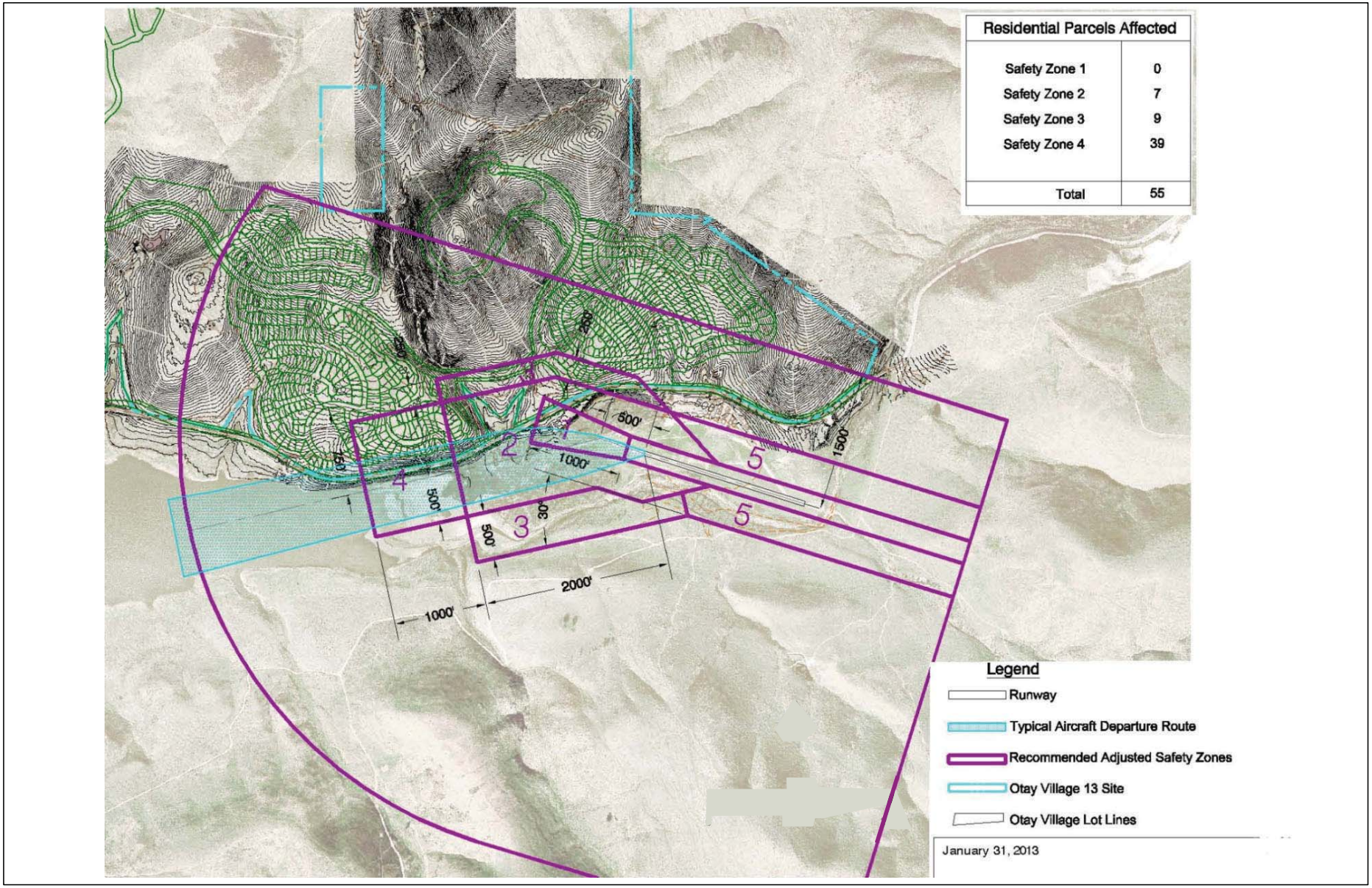
Safety Zone	Acreage within Zone[a]	Acres of "Open Land"	Percent of Zone as "Open Land"	*Handbook* Required Minimum Percentage[b]	Consistent?
Zone 1[c]	N/A	N/A	N/A	N/A	N/A
Zone 2	54.0	20.58	38.1%	25% - 30%	Yes
Zone 3	36.1	15.33	42.4%	15% - 20%	Yes
Zone 4	28.8	6.48	22.4%	15% - 20%	Yes
Zone 5[c]	N/A	N/A	N/A	25% - 30%	N/A
Zone 6[c]	N/A	N/A	N/A	10%	N/A

Table Notes:

[a] The "Acreage within Zone" quantities include off-site land that is located south of the Project site and within the safety zones, and that is part of the City of San Diego's *Multiple Species Conservation Program (MSCP) Subarea Plan* (March 1997), which is available for public review and inspection at http://www.sandiego.gov/planning/programs/mscp/docsmaps/index.shtml (last visited May 23, 2013). The subject off-site land located south of Otay Lakes Road is owned by the City of San Diego's ~~Water~~ Public Utilities Department and is referred to in the MSCP Subarea Plan as the Otay ~~Lakes~~ Reservoir component of the "Cornerstone Lands." According to the City's MSCP Subarea Plan, this off-site land will be protected as habitat lands and an open space corridor through conservation easements (City of San Diego, MSCP Subarea Plan [March 1997], pp. 28 and 29, 35.)

[b] The "*Handbook* Required Minimum Percentage" quantities are based on *Handbook*'s suggested "Guidelines for Extent of Open Land Near Airports" (pp. 4-31 and 4-32).

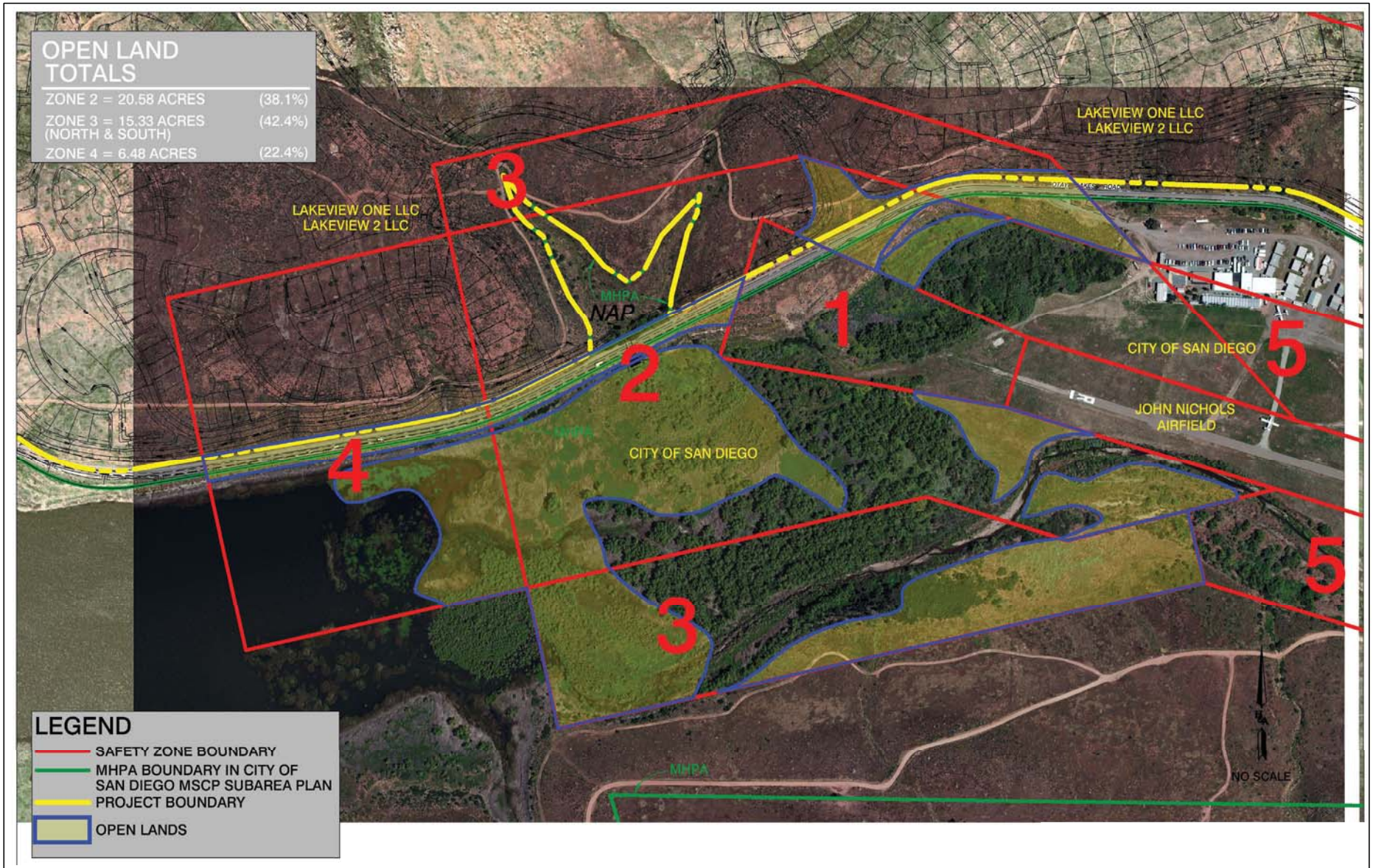
[c] Zones 1 and 5 are described as "N/A" because the Project does not contemplate~~d~~ development within any of these safety zones. Zone 6 is also described as "N/A" as there are no restrictions on density pursuant to the *Handbook*.



SOURCE: DUDEK

No Scale

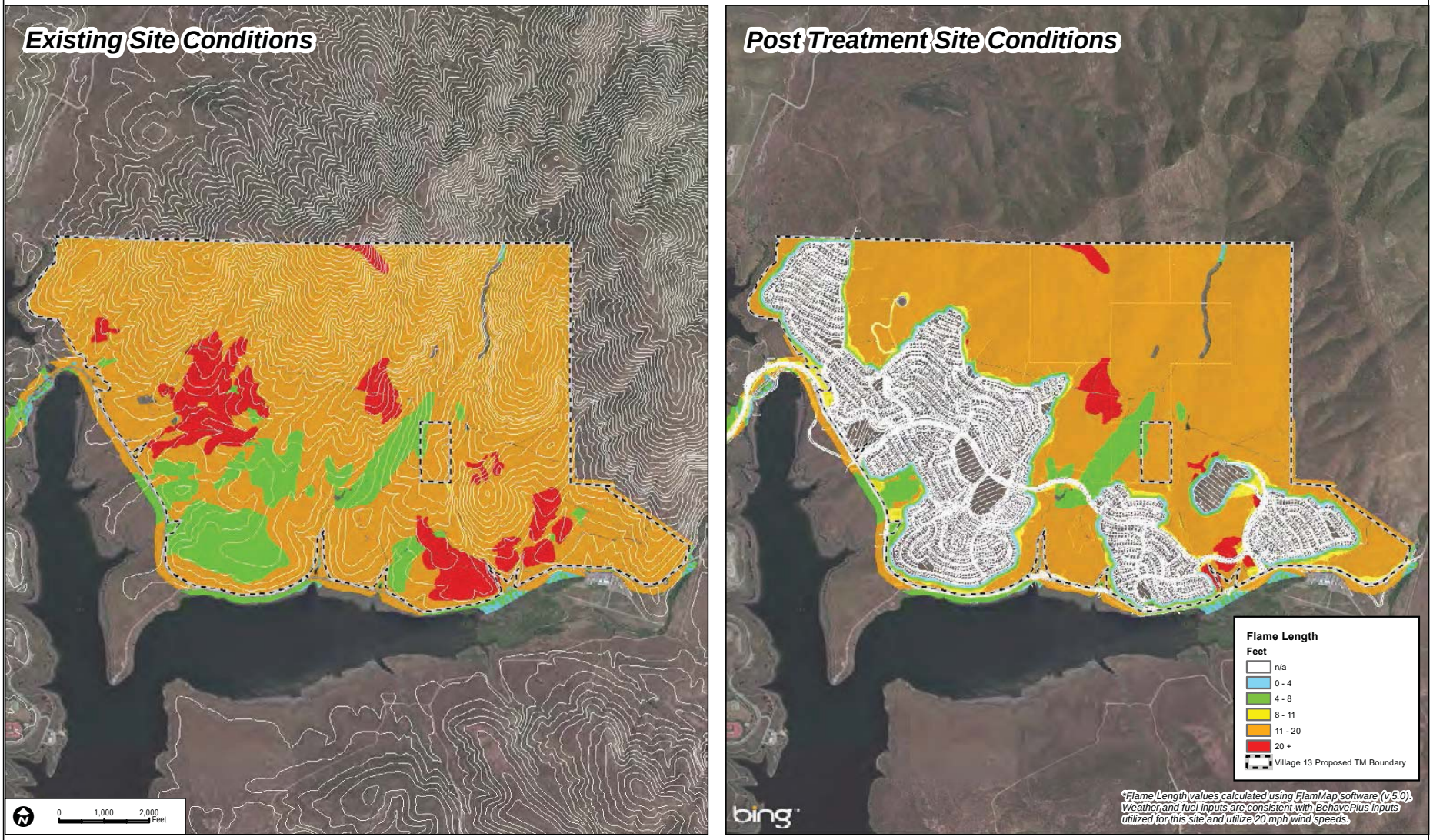
Figure 2.6-1
Modified Runway Safety Compatibility Zones



SOURCE: DUDEK

No Scale

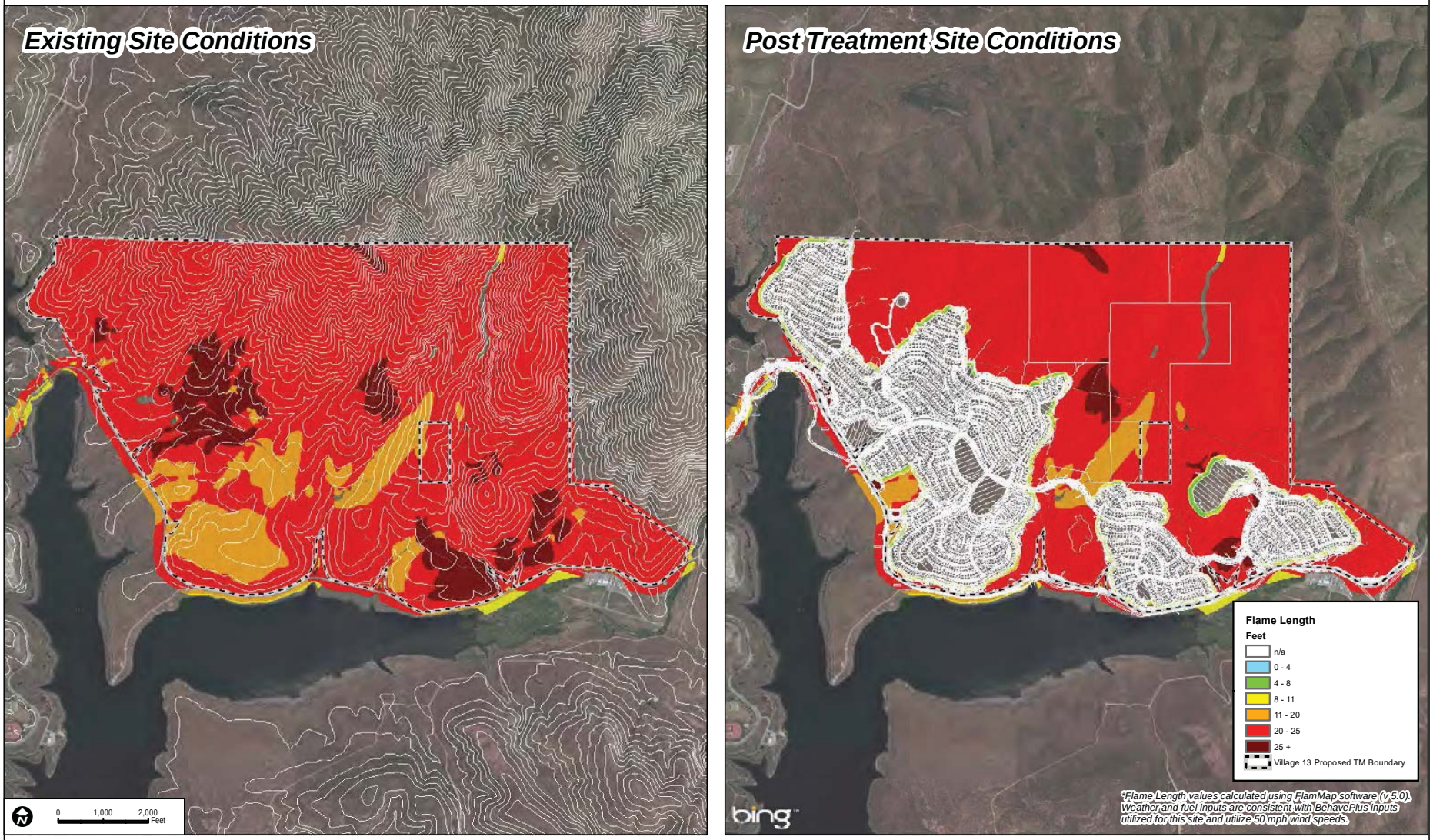
Figure 2.6-2
Open Space Within Safety Compatibility Zones



SOURCE: DUDEK 2014

0 2000 4000 Feet

Figure 2.6-3
Fire Behavior - Summer Fire



SOURCE: DUDEK 2014

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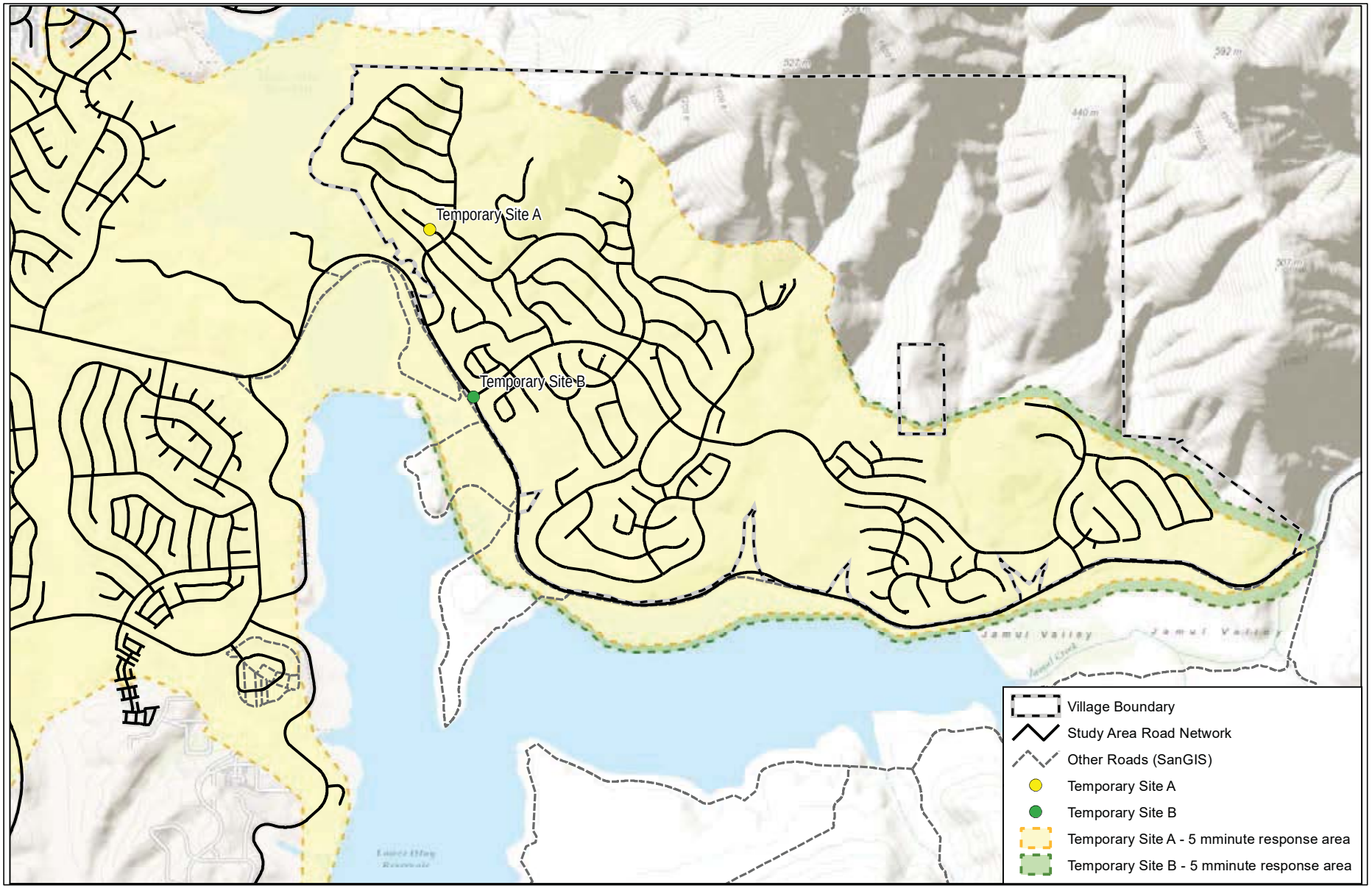
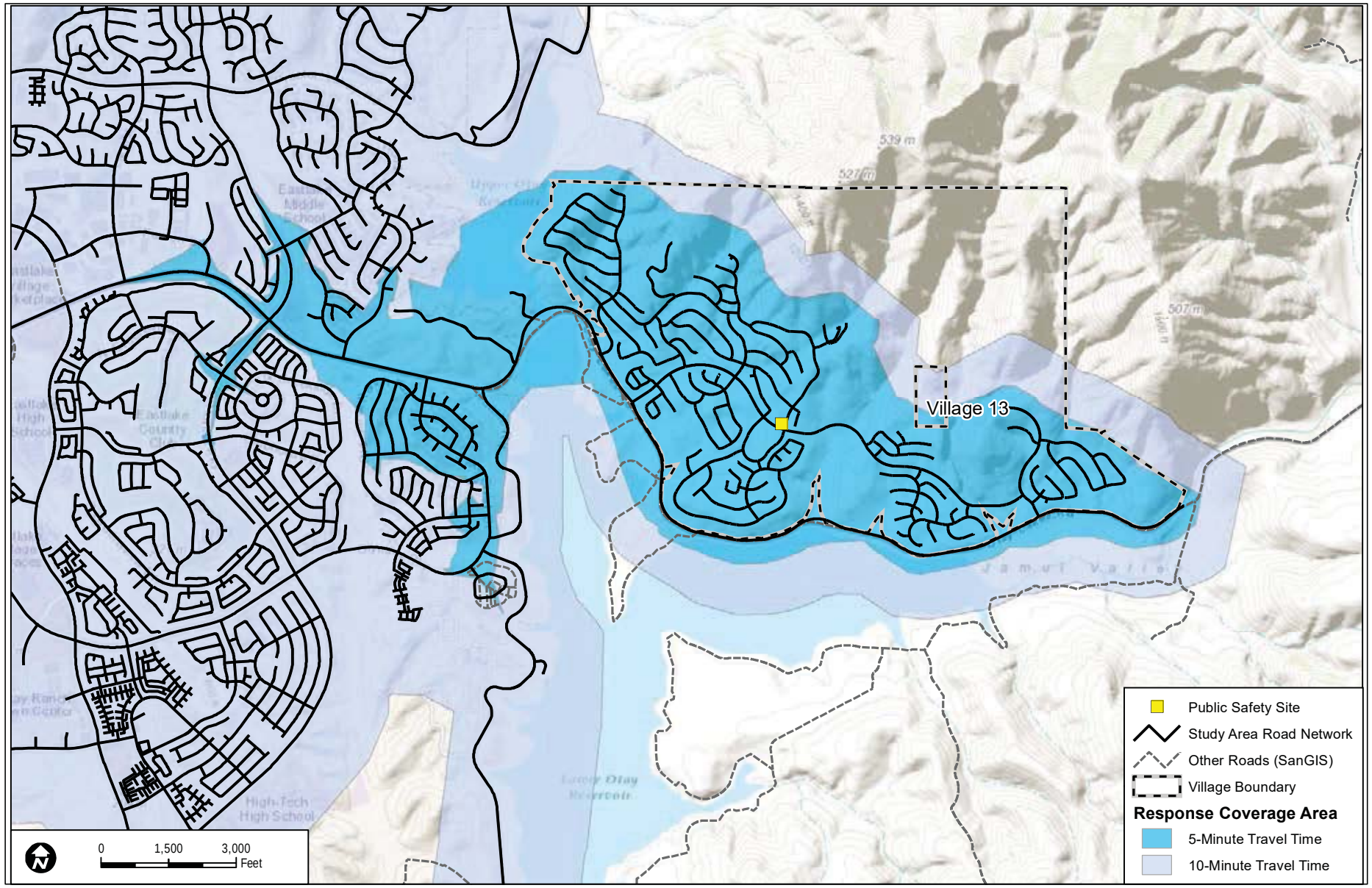
Figure 2.6-4
Fire Behavior - Fall Fire



SOURCE: DUDEK 2014

Figure 2.6-5A
Fire Department Response Analysis



SOURCE: DUDEK 2014

0 1500 3000 Feet

Figure 2.6-5B
Fire Department Response Analysis

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