Valley Center Evacuation Route Study
Final Report

Prepared For:

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Table of Contents

Appendices

List of Tables

List of Figures

1.0 Introduction

Central Valley Center
Looking south from Betsworth Road

Within the County of San Diego, the unincorporated communities have developed around a backbone of existing and proposed Mobility Element roads. While these roads are generally adequate to serve daily commuter traffic, the need for additional roads for evacuations in times of emergencies, such as wildland fires, is a key concern for many in the unincorporated communities. Many existing non-Mobility Element roads do not connect. Many are private and narrow roads with short curve radii, and limited or no public access which do not conform to current fire code requirements. Several communities have requested that additional local public roads be developed to improve road connectivity and provide additional means of evacuation for the community in times of emergencies.

The Valley Center Evacuation Route Study was initiated by the County of San Diego's Department of Planning and Land Use (DPLU) with the primary objective of identifying additional and potential corridors to enhance roadway connectivity in the unincorporated communities of the County. The intent is to prepare this Evacuation Route Study, along with a separate study for Jamul Dulzura, as pilot studies for the County's unincorporated communities. The primary purpose of this study is to identify potential evacuation routes that, if developed to acceptable standards, would serve as an evacuation route network for the community.

The Valley Center Evacuation Route Study Final Report documents and summarizes the various analyses that were completed over the course of the study. Four (4) individual issues papers were prepared including:

Issue Paper No. 1: Community Connectivity Assessment – documented the key areas of the community that are underserved by the public roadway network and areas of the community that could be impacted in the event of a community-wide emergency where an evacuation was to be required.

Issue Paper No. 2: Evacuation Corridor Identification – documented potential corridors within the community planning area that provide a connection between two critical evacuation points, provide additional access to deficient parts of the community, and/or provide additional regional access to major arterials and freeways serving the community.

Issue Paper No. 3: Emergency Evacuation Roadway Classification Scheme – documented potential roadway classifications appropriate for and supportive of emergency evacuations.

Issue Paper No. 4: Evacuation Corridor Feasibility Assessment- documented the analysis of the potential engineering and environmental issues that could affect the implementation of new roadways and connections through each corridor. Preliminary cost estimates and a review of evacuation benefits associated with each potential evacuation corridor were also provided.

A Stakeholder Review Committee was formed to facilitate the review of each of these issue papers. This Committee consisted of three members of the community, two of which were members of the Community Planning Group and a third member of the community at large. The Committee also included County staff members from the Department of Public Works, including representatives from the Transportation and Land Development Divisions, and representative from the Public Safety Group, Fire Authority, the Department of Planning and Land Use Project Planning Division.

1.1 Overview of Community Evacuation Route Study

Development of the Valley Center Evacuation Route Study included the following tasks over an approximate 18-month period which began in September 2010:

1. Identification within key areas of the Community Planning Area (CPA) where roadway connectivity is lacking and could result in problems if a community-wide evacuation were to be necessary.
2. Identification of potential new evacuation route corridors, including review with the Stakeholder Review Committee and the Community Planning Group (CPG).
3. Evaluation of the feasibility of improving the potential new evacuation route corridors to desired conditions and roadway classifications, including consideration of physical and environmental constraints.
4. Identification of a potential community evacuation route

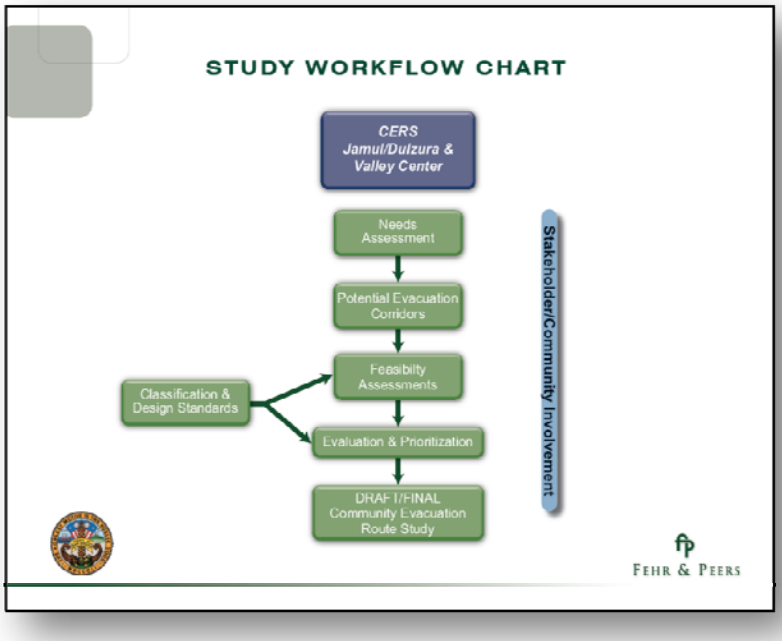

Figure 1-1 Study Process

network based on route alignments and design requirements to classify the alignment as an evacuation route.

5. Identification of a community evacuation route classification system and identification of local community priorities and recommendations for implementation.

Figure 1-1 graphically displays the study process. As shown the study included significant interaction with members of the community through a Stakeholder Review Committee and the Community Planning Group. The Stakeholder Review Committee met a total of four (4) times over the duration of the study, and the Community Planning Group was also provided project status reports at key points during the study process.

1.2 Organization of Report

Following this introductory chapter, this Final Report is organized into the following chapters:

Chapter 2.0 Overview of the Community Planning Area – provides a general description of the Valley Center CPA including location, existing/forecast population, the existing and planned roadway network, public facilities and overview of local development patterns.

Chapter 3.0 Evacuation and Roadway Connectivity Needs Assessment - describes the results of the needs analysis which, in addition to input from community representatives, focused on access and roadway connectivity issues within the Valley Center CPA.

Chapter 4.0 Evacuation Corridor Identification – documents the preliminary list of potential corridors (approximately a half-mile wide) which could serve the evacuation needs of the Valley Center community. These corridors then became the focus of a more detailed feasibility and benefit evaluation in subsequent tasks of the Study.

Chapter 5.0 Relevant State and Local Standards - provides a general overview of the relevant state and local codes and regulations related to and governing emergency access and evacuation.

Chapter 6.0 Evacuation Corridor Roadway Classification Scheme – describes specific design features (right-of-way, cross-section, surface type), implementation options, and related issues relevant to the designation and implementation of emergency evacuation routes.

Chapter 7.0 Evacuation Corridor Evaluation Process – documents the analysis of potential engineering and environmental issues associated with the implementation of new roadways and connections through the potential evacuation corridors, as well as the effectiveness of the corridors in meeting the evacuation needs of the community.

Chapter 8.0 Implementation Considerations – provides a discussion of issues and local priorities relevant to local implementation of the evacuation corridors.

2.0 Overview of the Valley Center Community Planning Area

The Valley Center Community Planning Area (CPA) spans approximately 94 square miles in the unincorporated area of northern San Diego County. The primary access into the Valley Center CPA is via Valley Center Road (S-6), which serves as the main linkage between the CPA and the City of Escondido located to the south. Interstate 15 borders the western portion of the CPA and Old Castle/Lilac Road provides the primary access from Interstate 15 to the central and eastern portions of the CPA. **Figure 2-1** displays the regional location of the Valley Center CPA.

2.1 Land Use and Population

The Valley Center CPA is characterized by its agricultural activities and its predominance of estate residential development. The rural character of the CPA emanates from the low population density and the prevalence of large areas of open space provided by agriculture. However, two villages in the relatively early stages of development are located in the center of the CPA and are planned for additional development under the General Plan. **Figures 2-2** and **2-3** display the existing and future land uses respectively within the CPA. **Figure 2-4** displays the pattern of public and private land ownership within the CPA. Public lands include those administered by the Federal, State, County governments, and various public and utility districts.

Local Agriculture Uses

Figure 2-5 displays the topographical features of the CPA. As shown the villages are predominantly flat with mountains surrounding them on all sides.

The Valley Center CPA currently has a residential population of approximately 18,300 people and 6,200 residential dwelling units. The CPA is projected to grow to over 31,500 people and approximately 12,500 residential dwelling units with build-out of the General Plan *(Source: County of San Diego General Plan, 2011).* **Figures 2-6** and **2-7** display the existing and future residential densities, respectively, throughout Valley Center CPA.

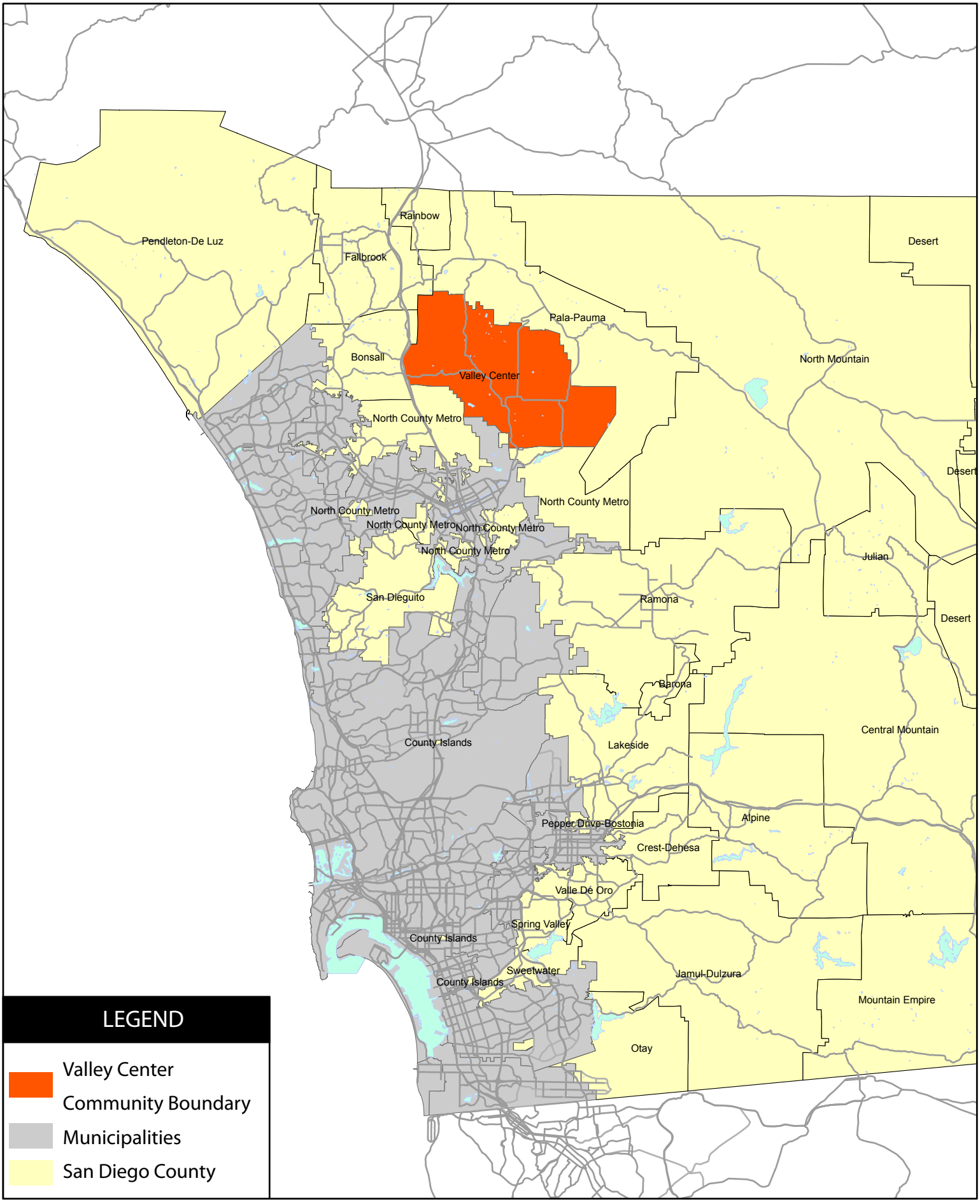

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FIGURE 2-1 - VALLEY CENTER - REGIONAL LOCATION MAP

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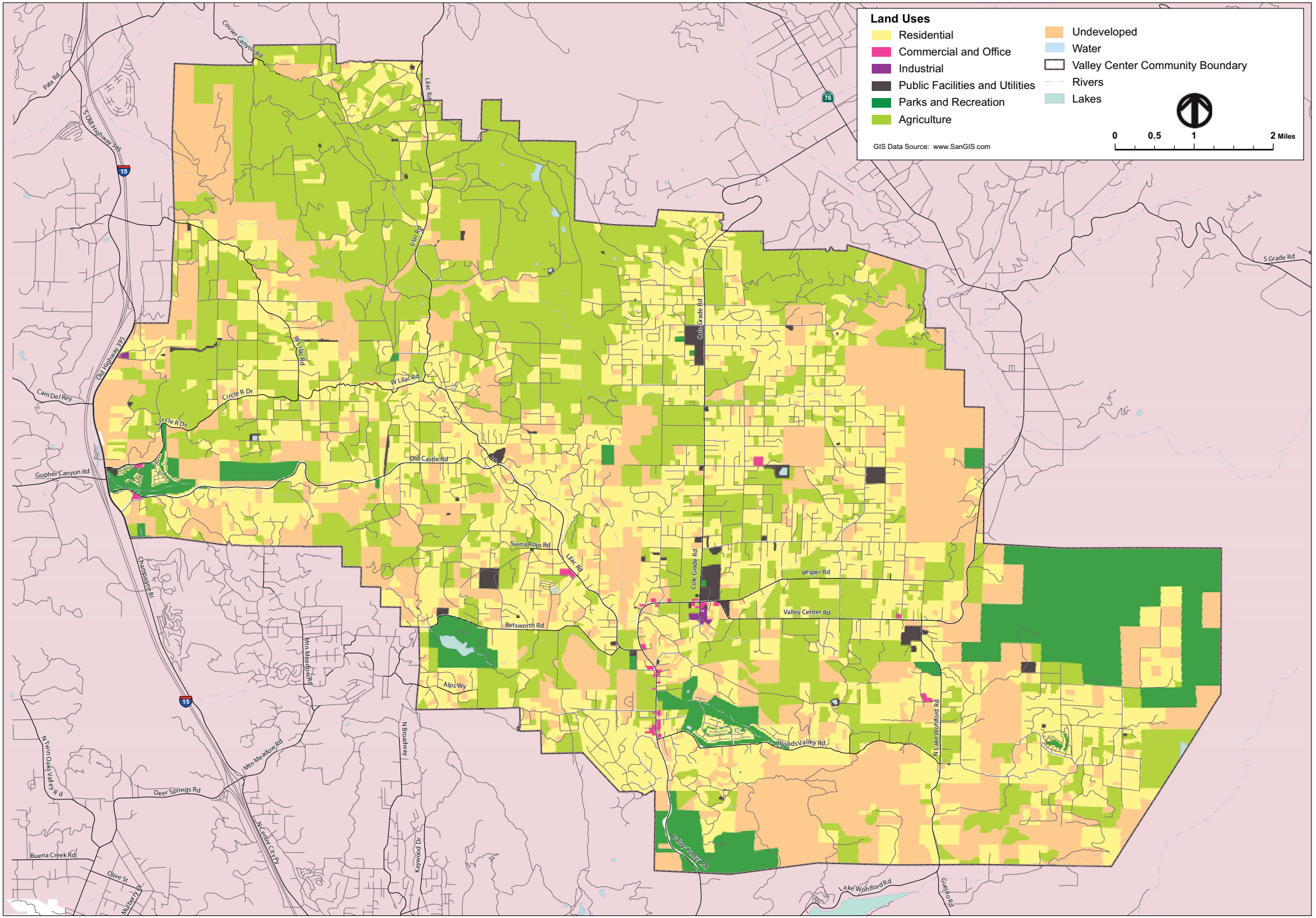

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FIGURE 2-2 - VALLEY CENTER - EXISTING LAND USES

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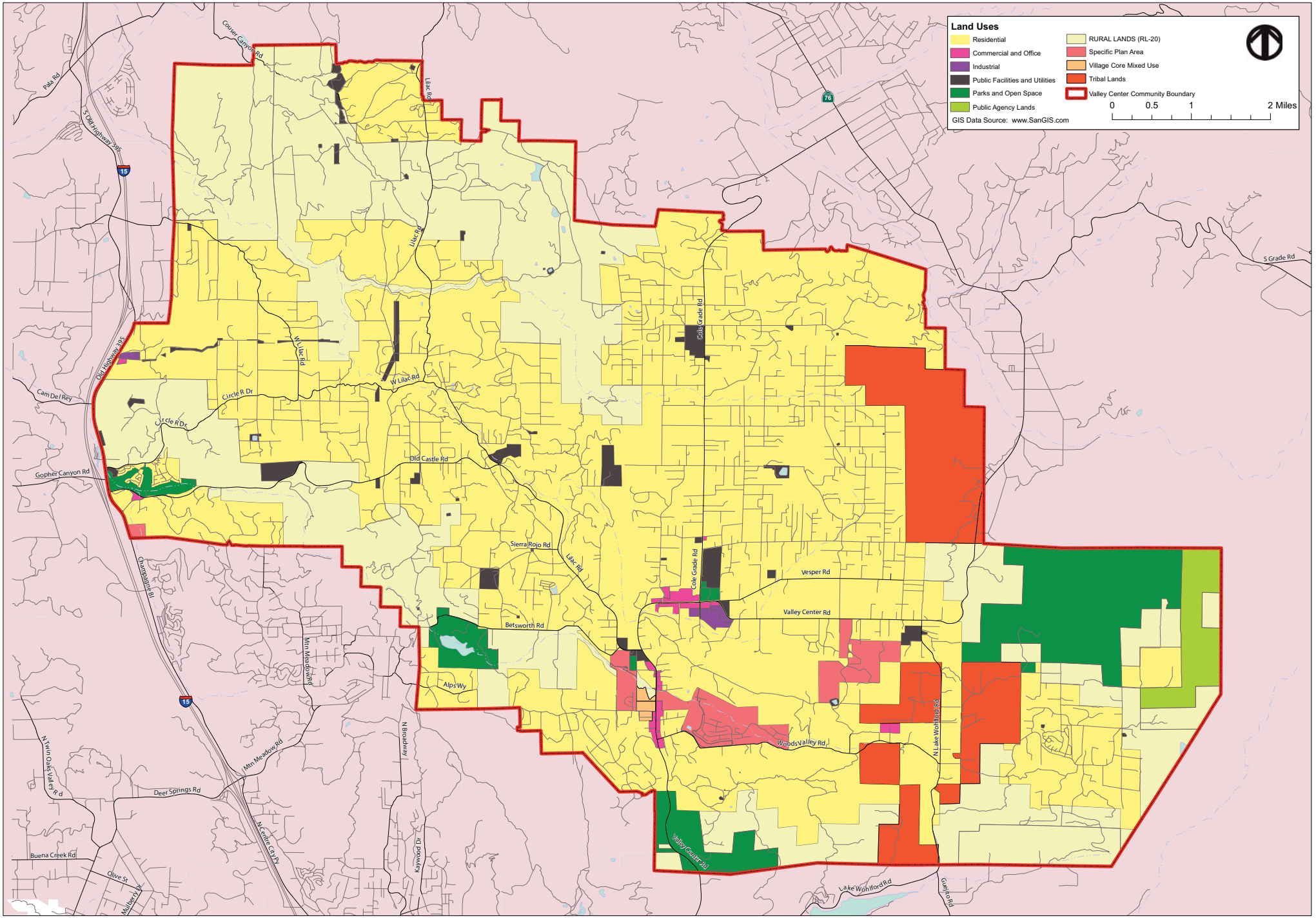

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FIGURE 2-3 - VALLEY CENTER - FUTURE LAND USES

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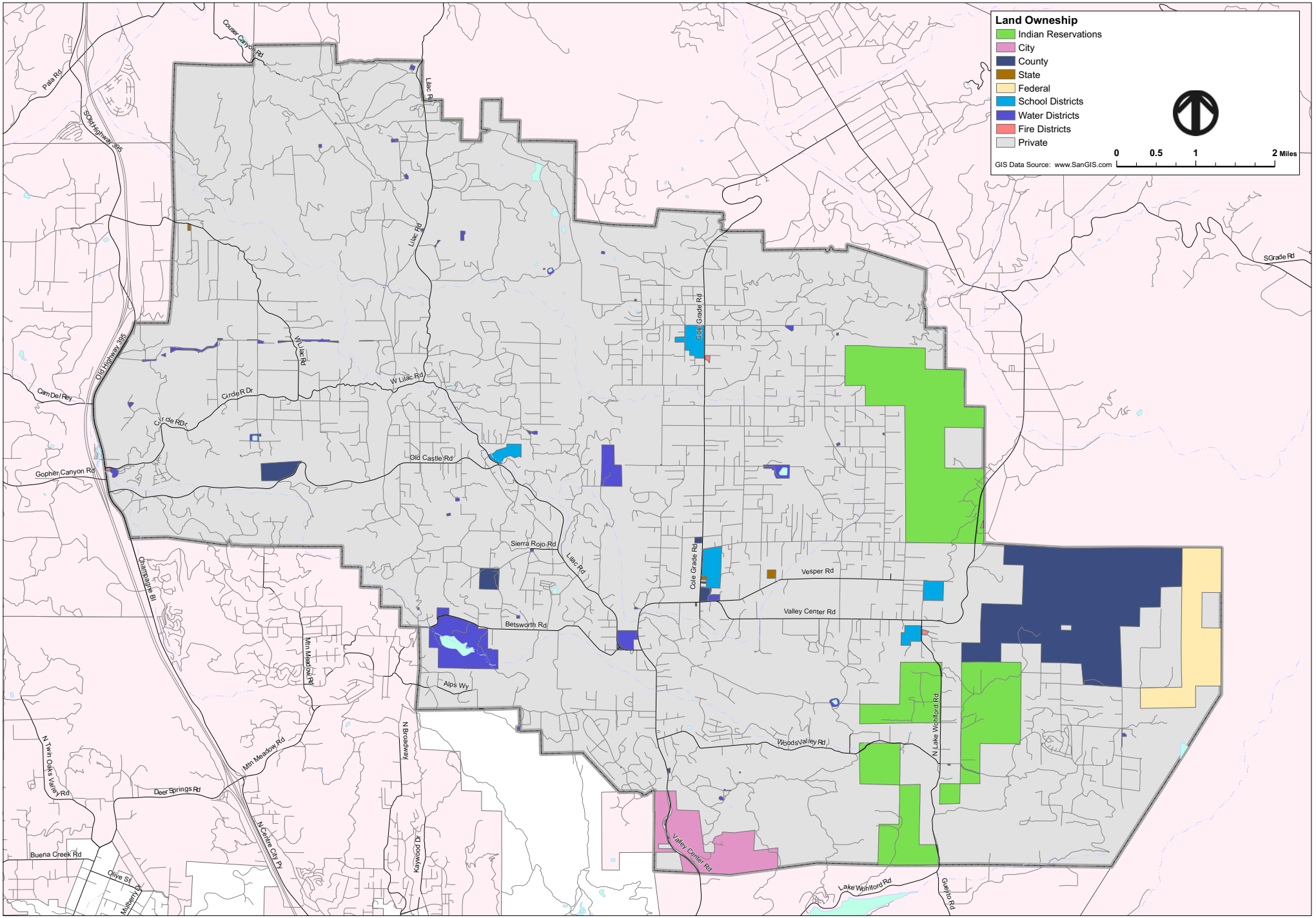

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FIGURE 2-4 - VALLEY CENTER - PUBLIC/PRIVATE LAND OWNERSHIP

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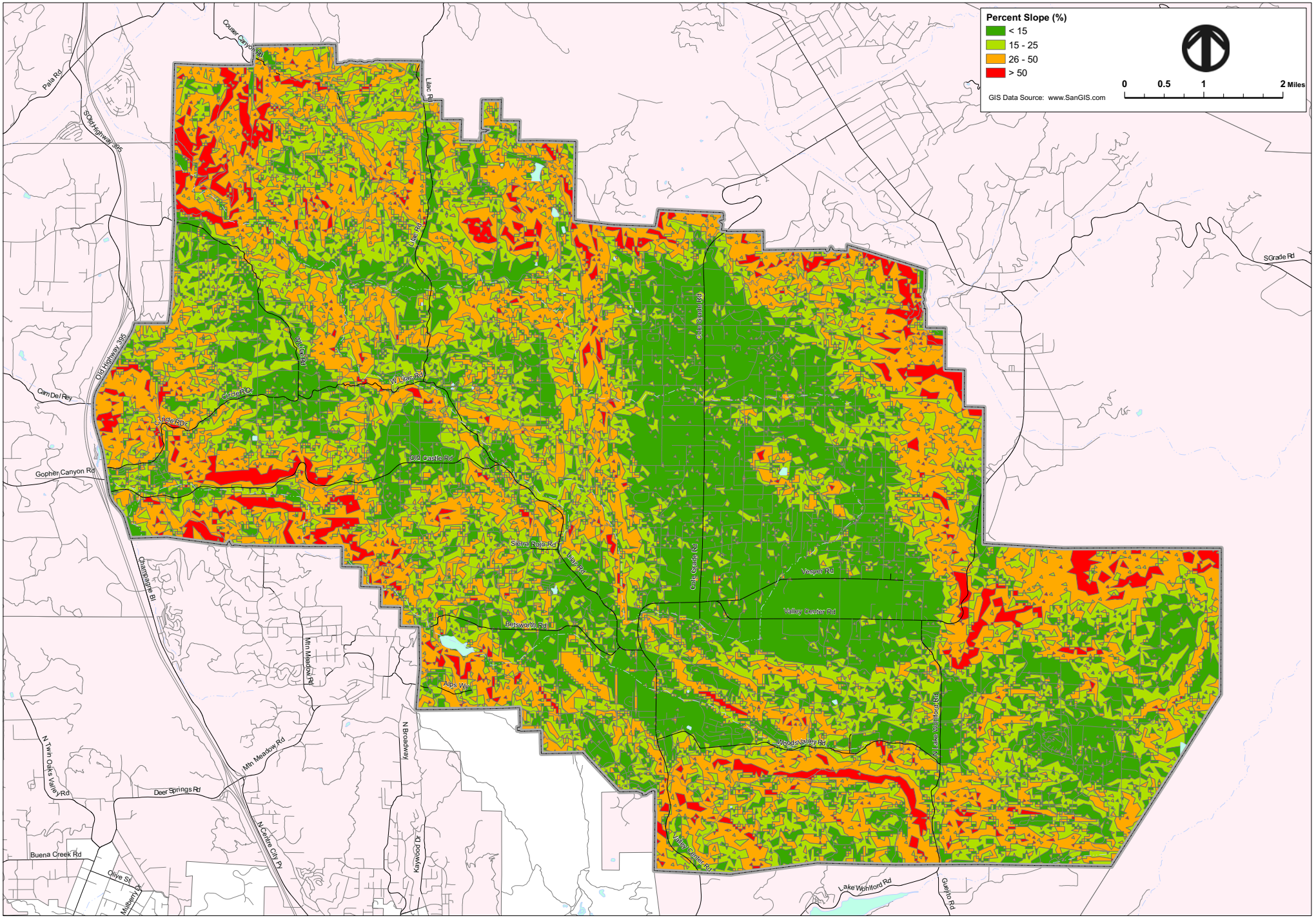

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FIGURE 2-5 - VALLEY CENTER - TOPOGRAPHY

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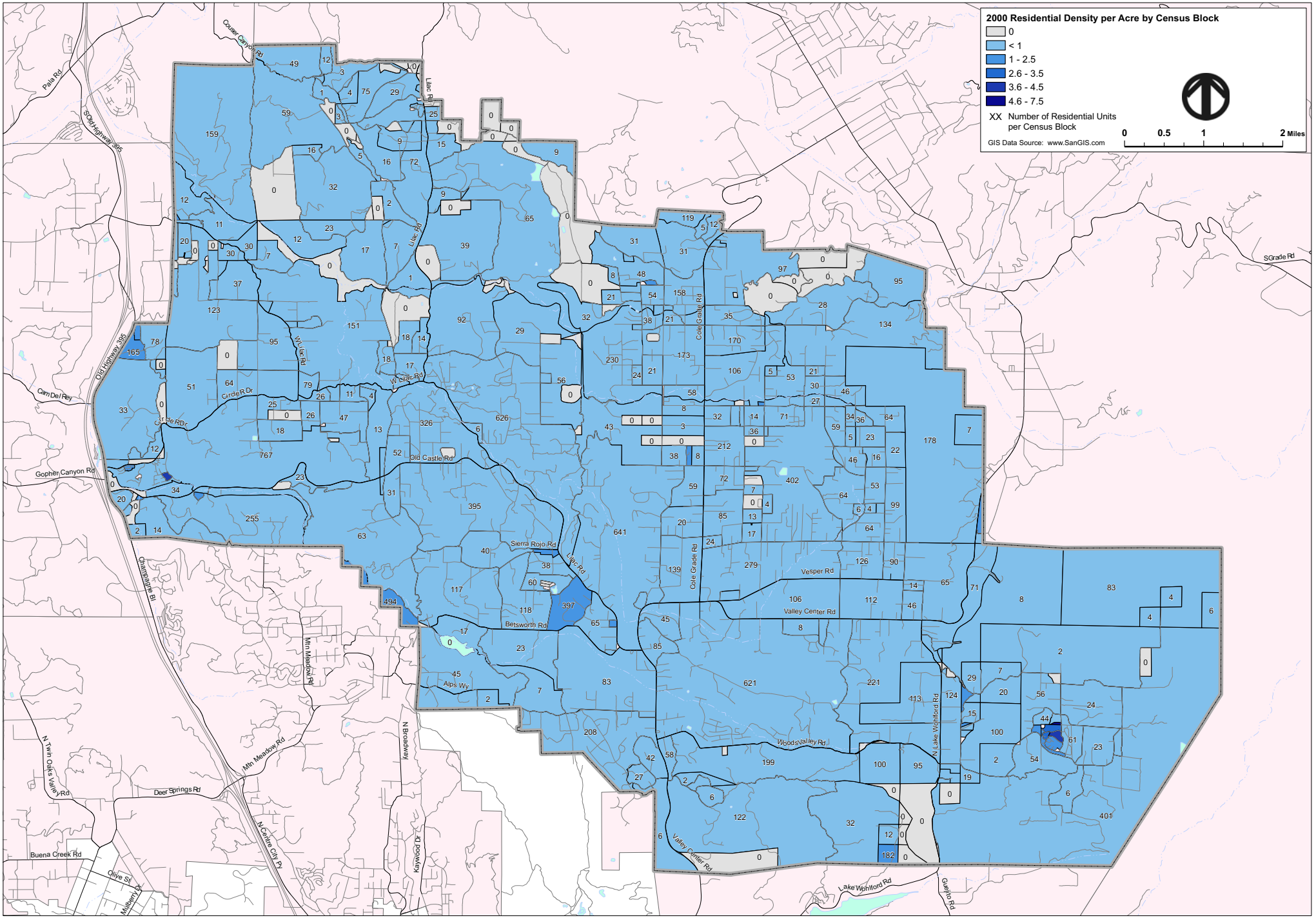

FIGURE 2-6 - VALLEY CENTER - EXISTING RESIDENTIAL DENSITIES

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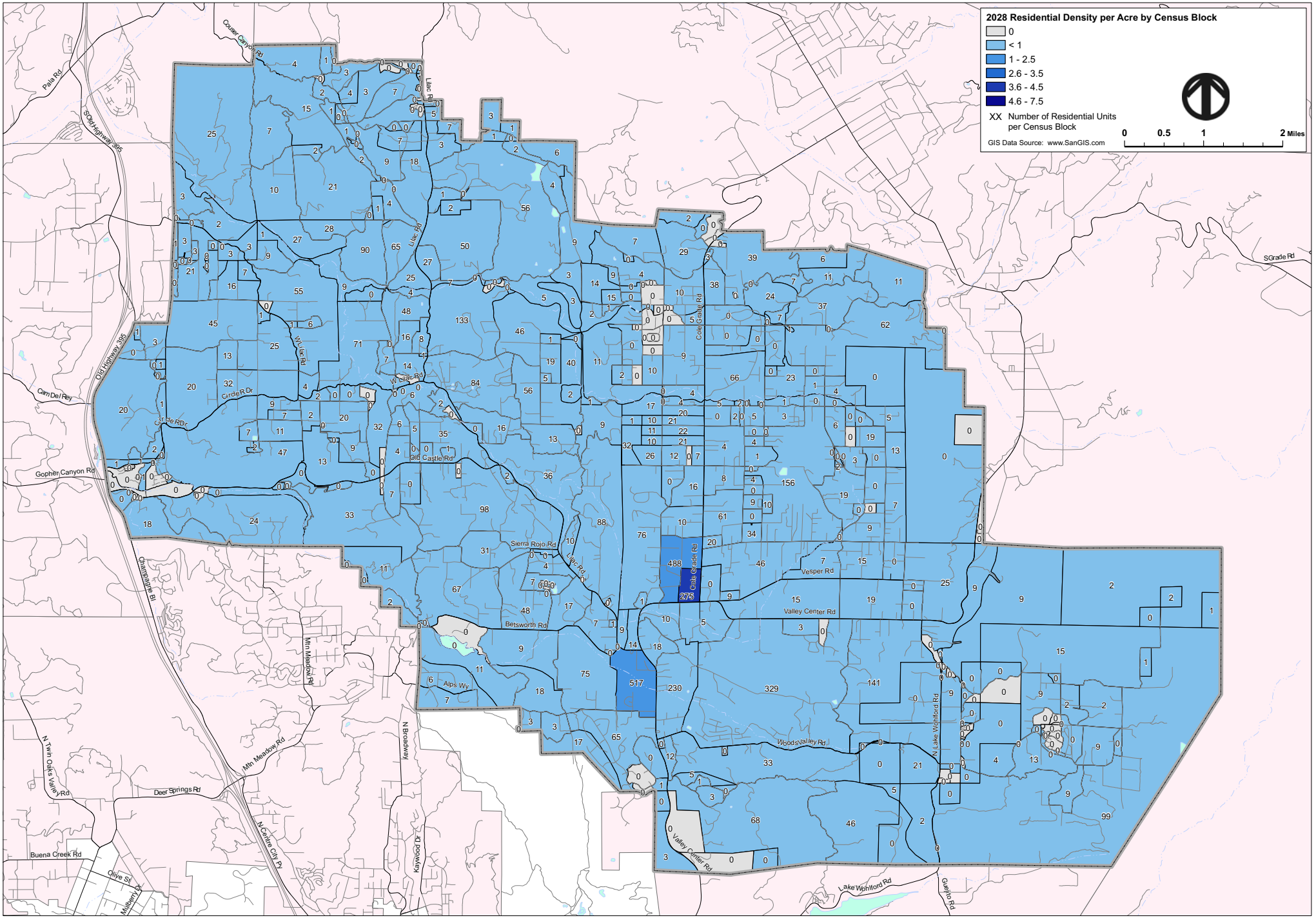

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FIGURE 2-7 - VALLEY CENTER - FUTURE RESIDENTIAL DENSITIES

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2.2 Local Public Facilities

The Valley Center CPA has its own fire district (Valley Center Fire Protection District) with two (2) full-time staffed fire stations (72 & 73), one (1) CAL FIRE station (71) and stations located on both the San Pasqual and Rincon Reservations. The Valley Center community is currently served by its own Sheriff's station. There are currently no hospitals located within the CPA.

There are ten (10) schools (Valley Center Primary, Elementary, Middle, High and Prep schools, Lilac Elementary, Oak Glen High School and 3 private schools,) located in the Valley Center CPA, along with the Valley Center Branch Library. **Figure 2-8** displays the location of the existing public facilities located within the Valley Center CPA.

2.3 Existing/Planned Roadway Network

Figure 2-9 displays the existing roadway network in the Valley Center CPA.

There are currently 61.3 miles of Mobility Element roadways (arterials and collectors) in addition to 20.0 miles of County maintained Local Public roadways for a total of 81.3 miles of public roadways within the CPA. In addition, there are 248.6 miles of private roadways, 24.2 miles of unpaved roadways located within the Valley Center CPA. There are currently no State Route facilities located within the Valley Center CPA. Key roadway facilities within the community include the following:

- *Valley Center Road (S-6)* – Valley Center Road is currently a four-lane divided roadway, which runs in the north/south direction from the Escondido city limit through the Valley Center South and North Villages, where it transition to a two-lane undivided roadway running in the east/west, then north/south directions to the Pala/Pauma Valley Subregional boundary. Valley Center Road is currently the only southern point of access to/from the Valley Center CPA.
- *Lilac Road* – Lilac Road is currently an undivided two-lane north/south roadway that runs between Valley Center Road to the south and the CPA boundary with Pala/Pauma to the north.
- *Old Castle Road* – Old Castle Road is currently a two-lane undivided east/west roadway which provides a connection between the I-15 freeway and the Valley Center CPA at Lilac Road.
- *Cole Grade Road* – Cole Grade Road is a north/south roadway connecting between Valley Center Road with the northern CPA boundary with Pala/Pauma, providing a connection between the North Village to the south and SR-76 to the north. Cole Grade Road is currently a two-lane undivided roadway, with a continuous left-turn lane between Valley Center Road and Horse Creek Road.
- *Lake Wohlford Road* – Lake Wohlford Road is currently a two-lane north/south roadway that provides a connection from Valley Center Road in the southern portion of the CPA to Valley Center Road in the northern portion of the CPA near the Pala/Pauma Subregion.

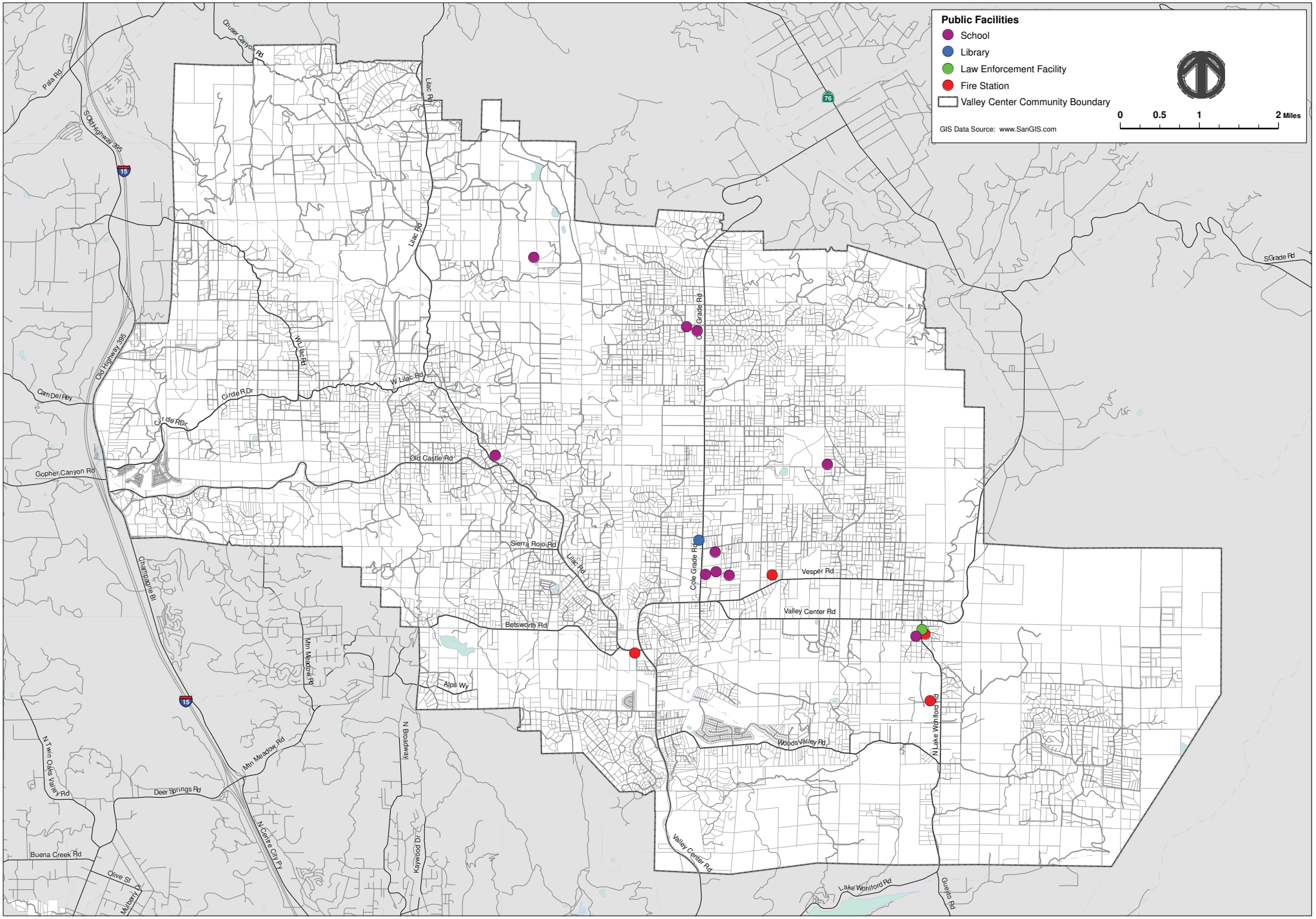

FIGURE 2-8 - VALLEY CENTER - EXISTING PUBLIC FACILITIES

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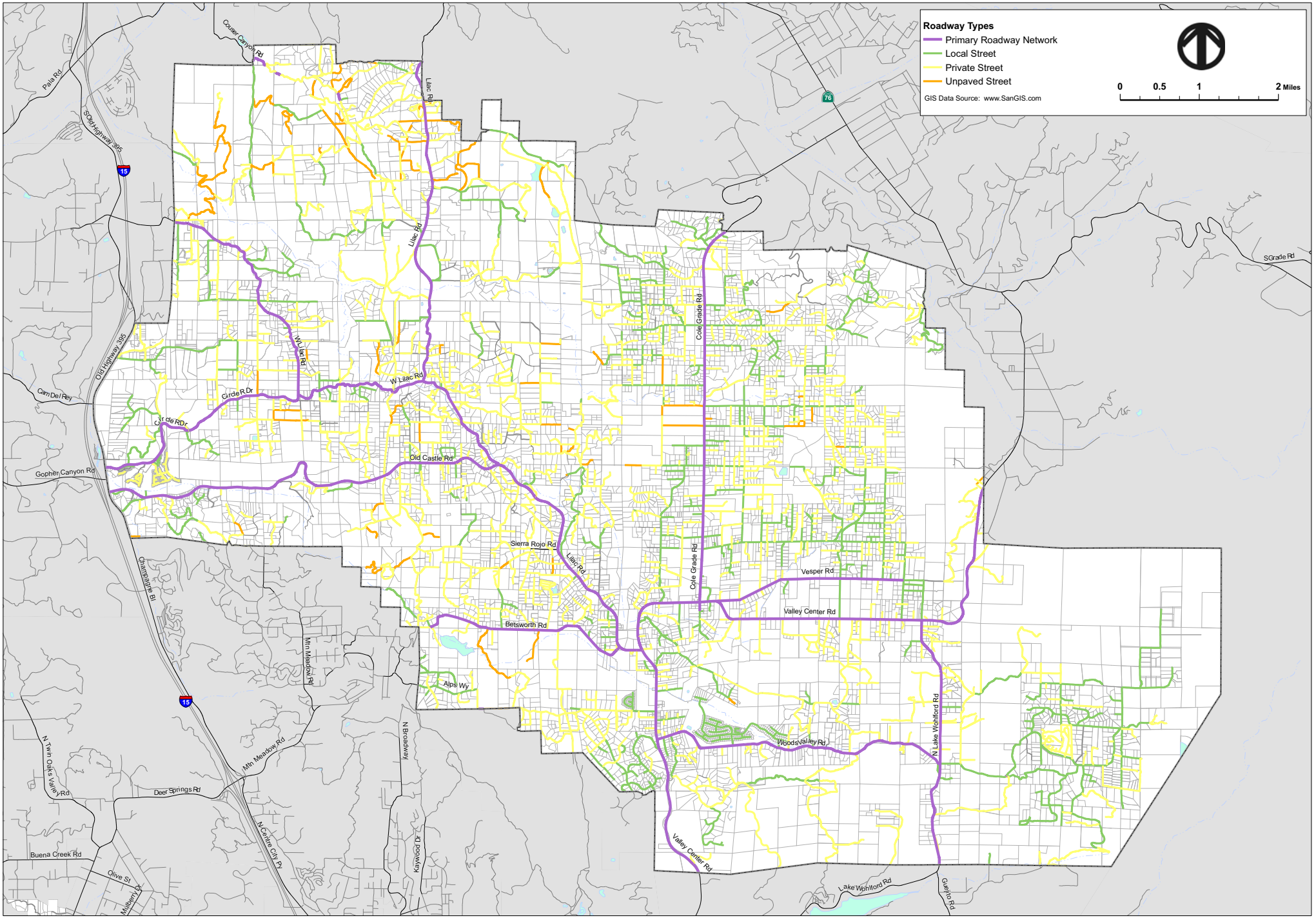

FIGURE 2-9 - VALLEY CENTER - EXISTING ROADWAY NETWORK

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Figure 2-10 displays the planned buildout roadway network for the Valley Center CPA as depicted by the General Plan.

The County General Plan depicts construction of an additional 11.7 miles of Mobility Element roadways within the Valley Center CPA, including the following:

- Completion of Mirar de Valle to the Hidden Meadows Subregional Group Area.
- Construction of an east/west roadway spanning the northern section of the CPA (New Road 3).
- Construction of Local Public and Mobility Element roadways within the North and South Villages (New Roads 11, 14, 17 and 19).

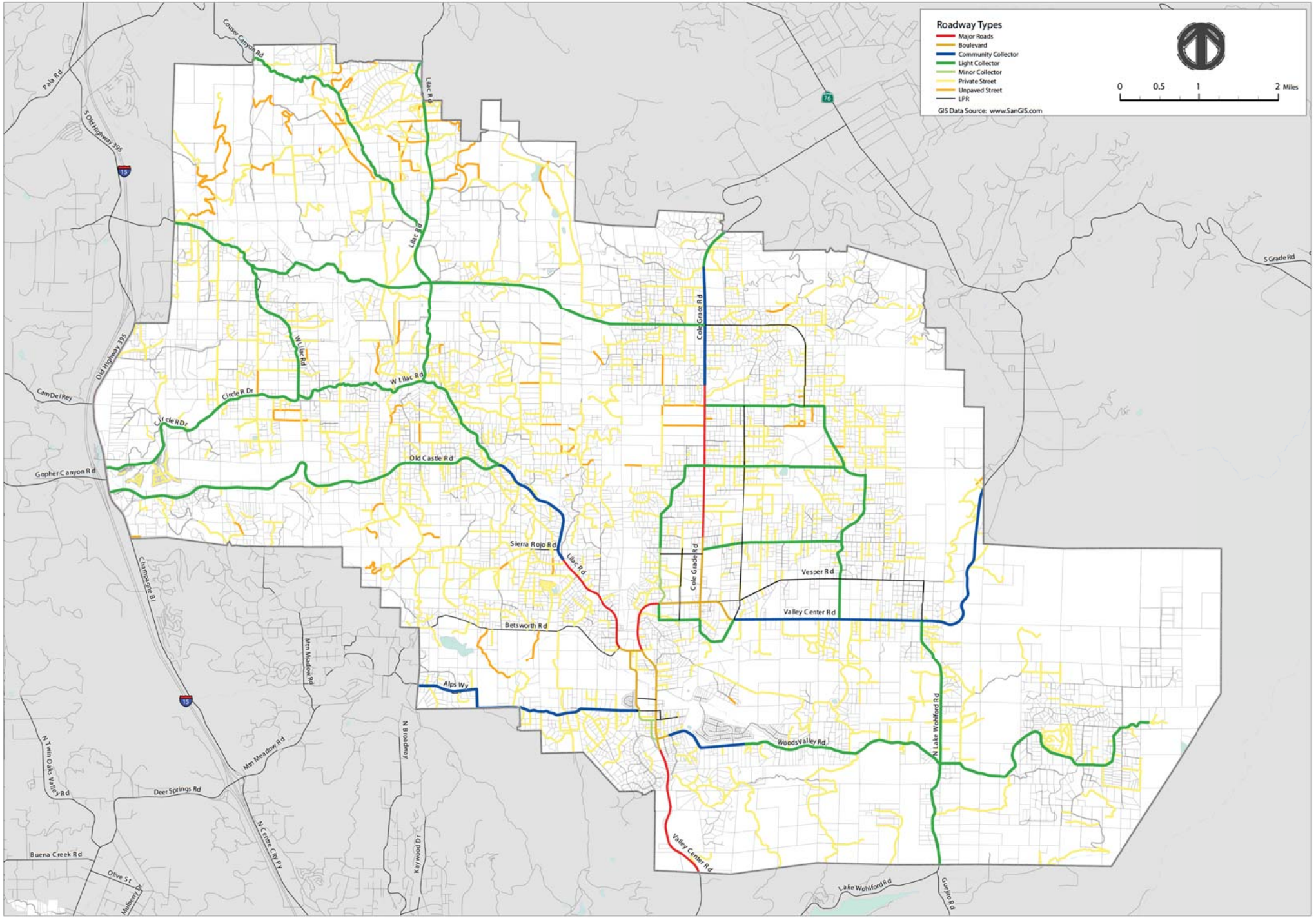

FIGURE 2-10 - VALLEY CENTER - FUTURE PLANNED ROADWAY NETWORK

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3.0 Evacuation and Roadway Connectivity Needs Assessment

This chapter describes key objectives relating to local evacuation needs and the results of the needs and roadway connectivity analyses. In addition to input from local community representatives via the Stakeholders Review Committee, the needs analysis focused on both local access and roadway connectivity issues within the Valley Center CPA.

3.1 Local Evacuation Objectives

Consistent with the overall objectives of the Evacuation Route Study, the following local community evacuation objectives were identified to assist in the needs assessment and the identification and evaluation of alternatives for improving community access and roadway connectivity:

Private access road through Water District

1. Ensure a variety of emergency evacuation routing options for the CPA;
2. Ensure that all developed parcels have an adequate level of access and options for emergency evacuations;
3. Ensure access to all major public facilities including fire stations, schools and parks;
4. Ensure access to the North and South Villages;
5. Ensure access to the major arterials and freeways providing broader regional connectivity (I-15, SR-76, Valley Center Road, Lilac Road, Cole Grade Road, Old Castle Road); and
6. Ensure that the future construction of Mirar de Valle Road and Road 3 provide enhanced local access and broader regional connectivity.

3.2 Needs Assessment Criteria

A variety of information and associated criteria were utilized to assist the process of identifying the community's evacuation roadway and connectivity needs. Input from the local community, and specifically the Stakeholder Review Committee, was most important. Criteria utilized included the following:

- Lack of Access Options – subareas of the community lacking an adequate level of local access
- Lack of Access Via Public Roadways – subareas of the community with excessive reliance upon non-publicly maintained roadways for access

- Lack of Roadway Network Connectivity – extent of local roadways without intersecting public roads and resulting poor levels of connectivity
- Community Input – subareas identified by the community as lacking adequate access and/or connectivity

3.3 Local Access Assessment

The Valley Center CPA access and connectivity needs were analyzed by reviewing the availability of multiple access points and the reliance on private and unpaved roads. Clearly emergency evacuation of subareas served by limited points of access would be constrained should those points of access become blocked or overloaded with evacuees. On a similar basis, the constrained access points would also provide few options for the deployment and movement of emergency equipment. Additionally, subareas totally reliant upon either private and/or unimproved roadways cannot safely depend on those roadways should they be unavailable due to locked gates or inclement weather affecting roadway driving conditions.

Subareas Lacking Multiple Access Points

The intent of providing multiple access points and limiting the allowable length of roadway without multiple access points is to ensure that residents have safe, reliable and known evacuation alternatives during emergencies, and that firefighters have access flexibility to deal with changing dynamics in wildfires and other emergencies. To ensure that parcels are developed with an adequate number of reliable access points the *County Fire Code and County Consolidated Fire Code* provide a Dead-End Road standard which governs the length of dead-end roadway a parcel would have to rely on as a singular access point.

Conducting a detailed assessment of the extent of developed parcels within the Valley Center community which do not meet the current Dead-End Road Standard is beyond the scope of this current study. However, as a preliminary indicator of need, a sketch-level exercise was undertaken to identify areas in which may be potentially at risk in times of a communitywide evacuation due to a lack of multiple access points and/or a reliance on dead-end roads. These criteria are based upon the length of the access roadway between a sub-area and the closest roadway in which a vehicle has two directional options for a safe evacuation (i.e. neither direction will lead to a dead-end roadway). The assumed length of required roadway would vary based upon zoned parcel size as displayed in **Table 3.1**.

Table 3.1
Maximum Access Road Length by Parcel Size

Parcel Size	Maximum Length of Access Road
Less than 1 Acre	800’
1 to 4.99 Acres	1,320’
5 to 19.99 Acres	2,640’
Over 20 Acres	5,280’

Source: *County Fire Code and County Consolidated Fire Code*

Using GIS, the above criteria were applied on an individual parcel basis within Valley Center, with the results shown in **Figure 3-1.** The figure displays the existing developed area in the Valley Center CPA that do not, at a minimum, have sufficient points of access based upon application of the criteria. The results as depicted, while illustrative of the nature of the issue, likely understate the extent or magnitude of the issue in Valley Center. A strict application of the Dead-End Road Standard would likely result in far more areas of the community being depicted as deficient relative to parcel points of access. Additionally, the development potential of many currently undeveloped parcels is currently limited by the lack of adequate points of access.

Subareas Reliant on Private and Unpaved Roads

Due to the uncertain accessibility of private and unpaved roads during evacuation conditions, an analysis was conducted to determine the extent of developed parcels which rely exclusively upon private or unpaved roads as a primary or secondary access point. **Figure 3-2** displays the developed parcels in the Valley Center CPA which rely on private and/or unpaved roadways for access. It is estimated that approximately two-fifths (2/5) of the total developed parcels in the Valley Center CPA currently rely upon private and/or unpaved roads for access.

3.4 Roadway Connectivity Assessment

The number of accessible roadways as well as their connectivity with one another is important in an evacuation situation. A greater number of roadways and connection points give both motorists and emergency responders multiple route options under evacuation conditions.

A Connectivity Index based upon intersection spacing was developed as a means of measuring the connectivity of the public roadway network in the Valley Center CPA. **Table 3.2** displays the intersection spacing index as applied. The underlying assumption is that a roadway network with extensive connectivity includes numerous access points between roadways, (e.g. intersections), and therefore a variety of alternatives for evacuation routings.

Table 3.2
Connectivity Index
Maximum Distance between Intersections on Public Roadway Facilities

Facility Type	Distance (Miles)
Mobility Element Roadways	**1.0**
Local Public Roadways	**0.5**

Source: Fehr & Peers

Figure 3-3 displays the roadways within the Valley Center CPA which were found to not conform to the above connectivity index. As shown, a number of roadway connectivity limitations exist throughout the CPA which can affect the ability to evacuate under emergency conditions.

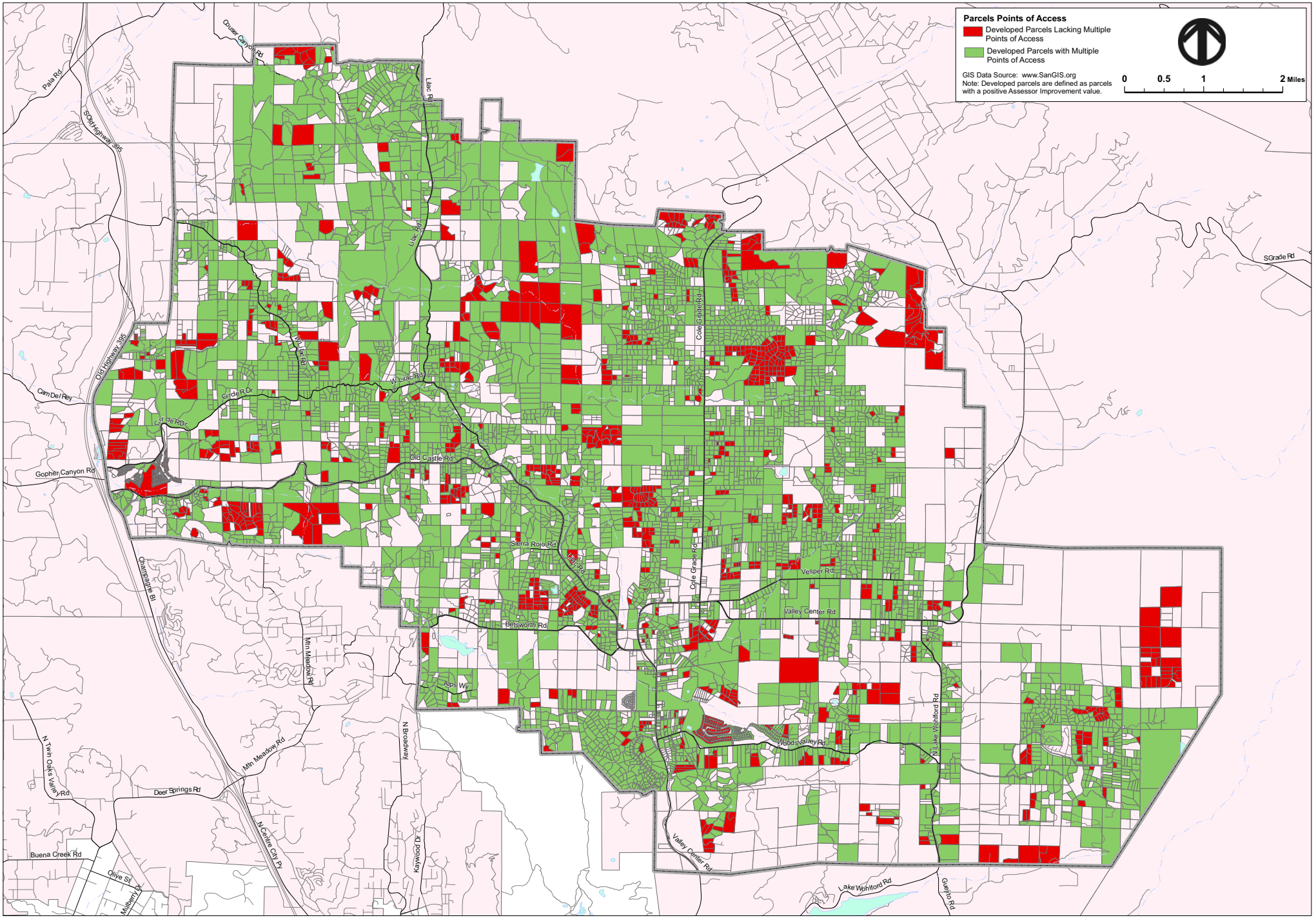

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FIGURE 3-1 - VALLEY CENTER - PARCELS LACKING MULTIPLE POINTS OF ACCESS

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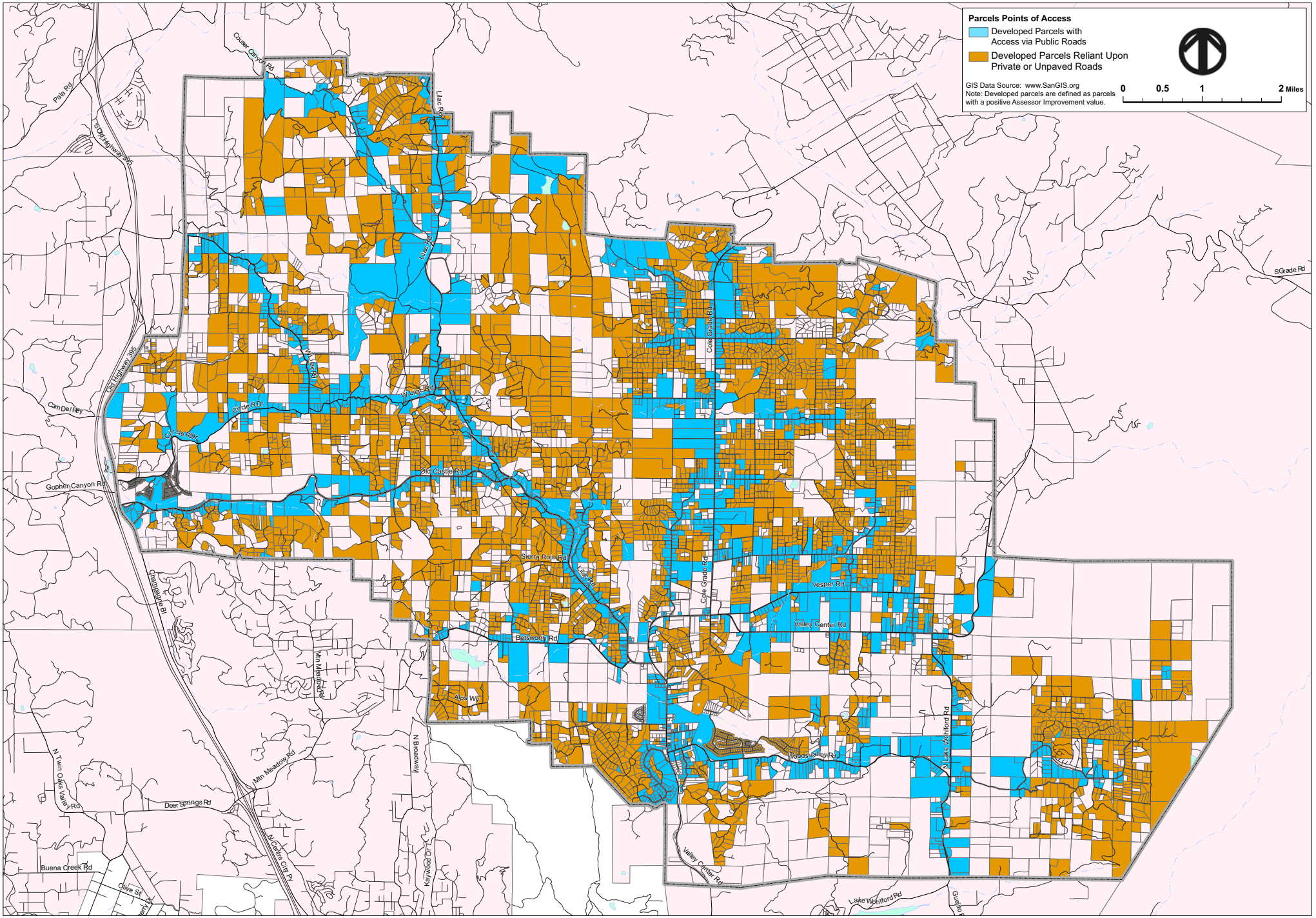

FIGURE 3-2 - VALLEY CENTER - PARCELS RELIANT UPON PRIVATE AND/OR UNPAVED ROADWAYS

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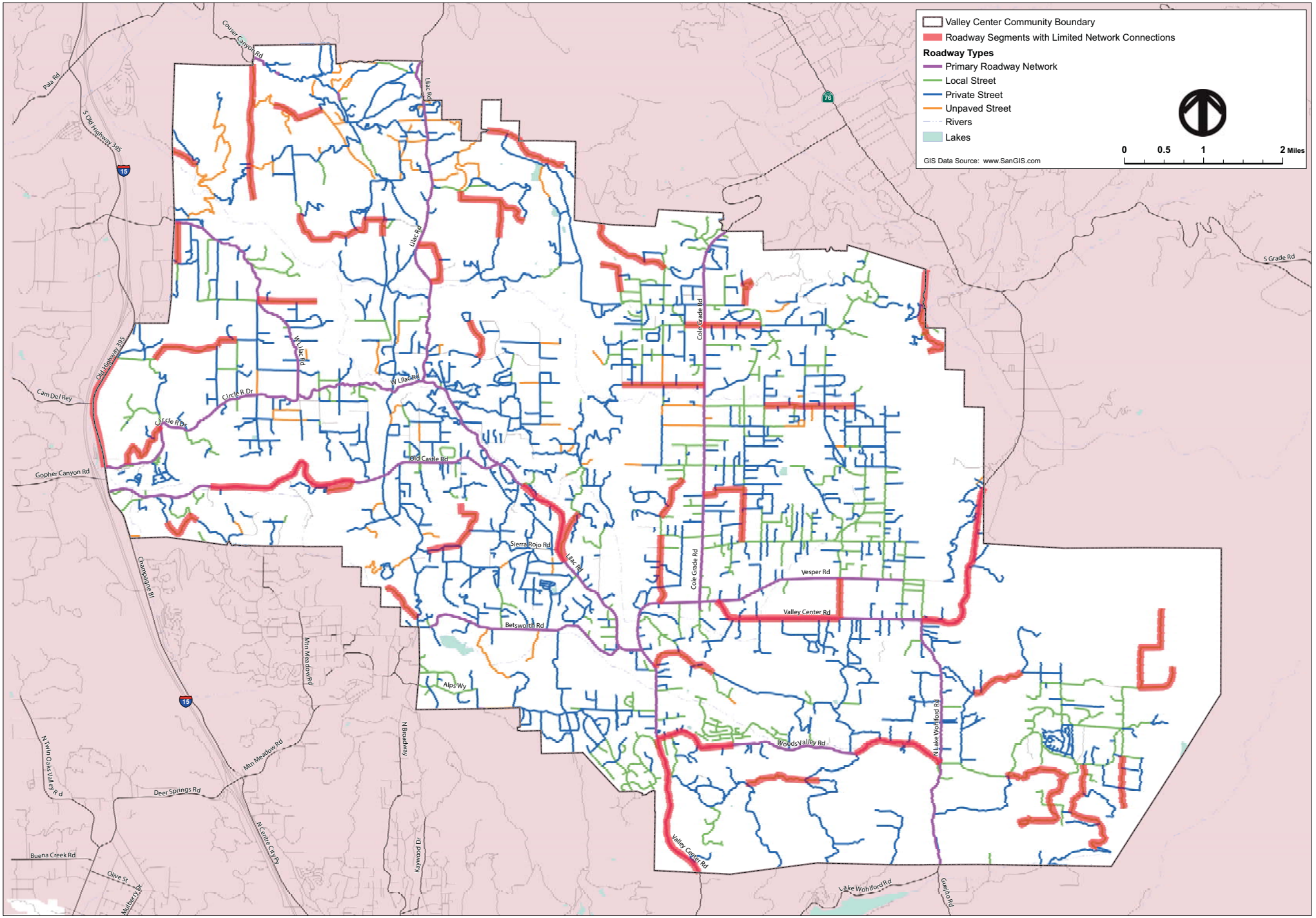

FIGURE 3-3 - VALLEY CENTER - PRELIMINARY MAP OF LACK OF ROADWAY NETWORK CONNECTIVITY

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3.5 Community Identified Needs and Issues

The previous needs analysis information was presented to the Valley Center Stakeholder Review Committee for their input and further refinement. Based upon this review, the Committee identified specific areas of the community which they felt lacked adequate access and connectivity. The following access needs and issues were identified:

1. Need for an additional public east/west roadway connection in the central and northern areas of the CPA; i.e. New Road 3 and Mirar de Valle.
2. Need for a continuous east/west roadway connections between Cole Grade Road and Lilac Road.
3. Need for additional public roadway connections between Old Castle Road and West Lilac Road.
4. Need for additional public roadway connectivity (both north/south and east/west) between Betsworth Road and Old Castle Road (north/south) and Wilkes Road and Lilac Road (east/west).
5. Need for a continuous southwest/northeast roadway connection between Cole Grade Road and Via Piedra.
6. There are currently no public routes connecting Cool Valley Road and Yellow Brick Road.

Looking south along Yellowbrick Road

7. Connectivity along Yellow Brick Road and within the adjacent areas is discontinuous, with numerous private roads and limited through access points. The need for good access/connectivity to Thundernut Lane between Vesper Road and Valley Center Road was also noted.
8. Need for additional public roadway connections between Betsworth Road and Mira De Valle.
9. Need for additional public roadway connections between Valley Center Road and Cool Water Ranch Road.
10. Additional north/south public roadway connections are needed between Valley Center Road and Woods Valley Road. There are currently no public north/south roadways between Valley Center Road and North Lake Wohlford Road that connect Valley Center Road and Woods Valley Road.
11. Need for additional access points to the Paradise Mountain neighborhood. Currently Paradise Mountain Road is the only public roadway that provides access to the neighborhood.

Figure 3-4 displays the location of the issues/needs as identified by the Stakeholder Review Committee.

In summary, the Valley Center CPA faces a number of challenges in ensuring safe evacuation routings for all residents:

- Many currently developed areas lack adequate points of access. Areas served by single points of access are at risk, should that point of access become blocked or overloaded with evacuees. In a similar manner, limited points of access also provide few options for emergency equipment.
- Many currently developed parcels rely upon private and/or unpaved roadways for access. These parcels cannot safely depend on these roadways for emergency evacuation should they be unavailable due to locked gates or inclement weather affecting roadway driving conditions.
- The connectivity of the roadway system, as measured by the prevalence of intersecting roadways, varies throughout the CPA. These findings were reinforced by members of the Stakeholder Review Committee, which identified numerous areas of the CPA lacking proper access and roadway connectivity.

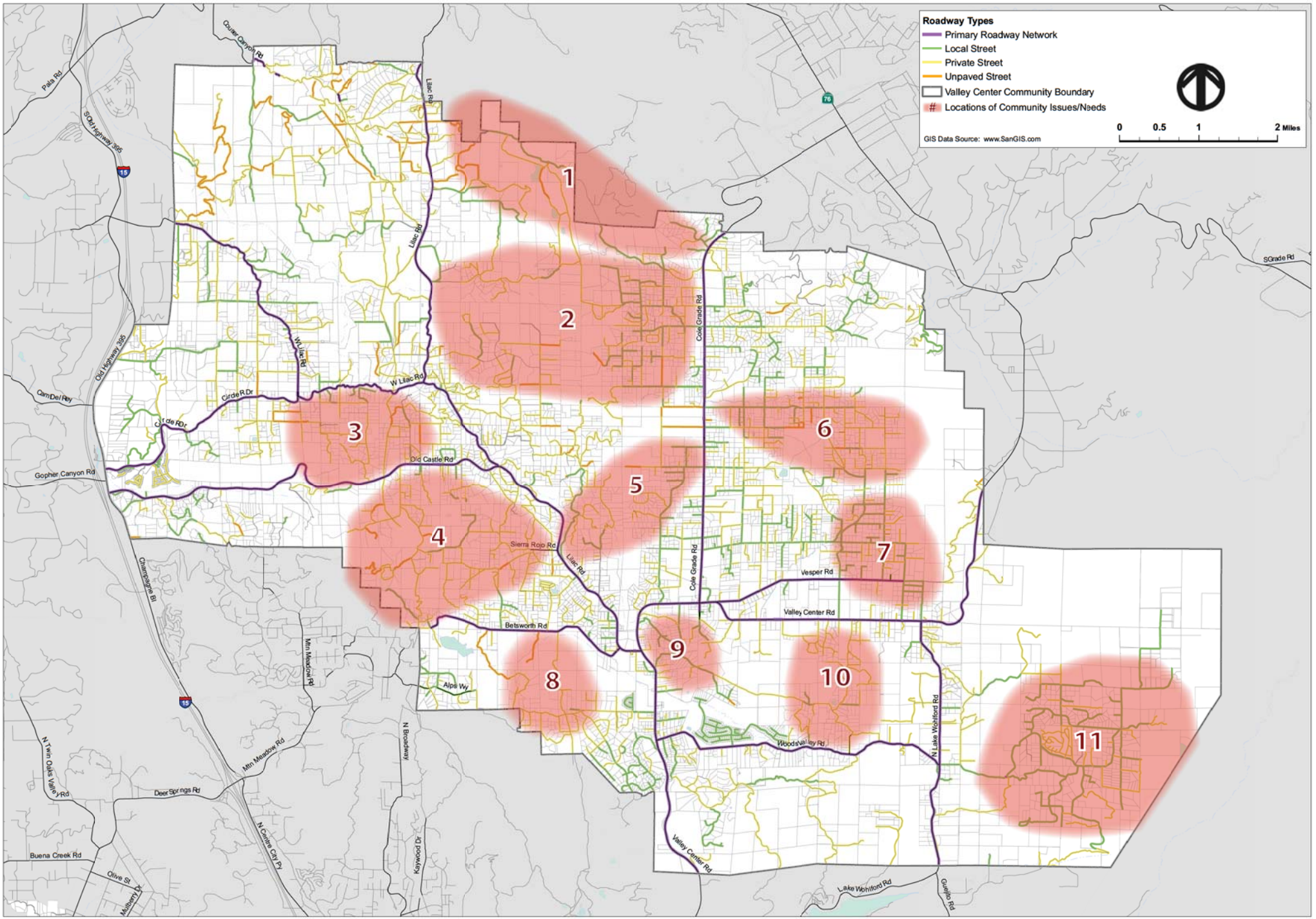

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FIGURE 3-4 - VALLEY CENTER - COMMUNITY IDENTIFIED ISSUES AND NEEDS

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4.0 Evacuation Corridor Identification

This chapter documents potential corridors (approximately a half-mile wide) within the Valley Center community that provide a connection between two critical evacuation points, provide additional access to deficient parts of the community, and/or provide additional regional access to major arterials and freeways. Subject to subsequent evaluations provided in the following chapters, these corridors establish, on a preliminary basis, the general location for potential new roadway connections intended to improved access and support for community emergency evacuations.

Unpaved section of Yellowbrick Road, looking north

The identification of the evacuation corridors at this point in the study process was conceptual, with the potential for a variety of actual roadway alignments and configurations within the broadly defined corridors. The evacuation corridors were preliminary, with the objective of considering all potential connections that may service an evacuation need. Subsequent evaluations addressed the feasibility and benefits associated with these corridors (see Chapter 7.0), including the effects of land topography, the potential for significant environmental impacts, and land ownership issues.

Within the Valley Center community, a total of 14 potential evacuation corridors were identified for further analysis, as listed in **Table 4.1** and displayed in **Figure 4-1**.

Table 4.1
Preliminary Valley Center Evacuation Corridors

#	Termini	Community Need/Objective
1	West Lilac Road & Mirar De Valle	Enhance north/south connectivity
2	Lilac Road & Cole Grade Road	Enhance east/west connectivity
3	West Lilac Road & Cole Grade Road	Enhance east/west connectivity Proposed ME Roadway (Light Collector)
4	West Oak Glen Road & Hilldale Road	Improve local connectivity/access
5	Mountain Meadow Road & Corridor #6	Enhance east/west connectivity
6	Lilac Road & Cole Grade Road	Enhance east/west connectivity Partially included in former CE (Light Collector between Lilac Road and Cole Grade Road) but not in the current General Plan ME.
7	Betsworth Road & Mirar De Valle	Enhance north/south connectivity
8	Mountain Meadow Road & Valley Center Road	Enhance east/west connectivity
9	Valley Center Road & Cole Grade Road	Enhance north/south connectivity
10	Cole Grade Road & SR-76	Provide additional access to regional facilities.
11	Cool Valley Road & Corridor 9	Provide additional local access throughout northwest portions of the community. Partially included in the ME (Light Collector)
12	Valley Center Road & Woods Valley Road	Enhance north/south connectivity
13	North Lake Wohlford Road & Los Hermanos Ranch Road	Provide additional access to the Paradise Mountain neighborhood.
14	Paradise Mountain Road & Guejito Road	Provide additional access to the Paradise Mountain neighborhood. Included in former CE (Light Collector) but not in the current General Plan ME.

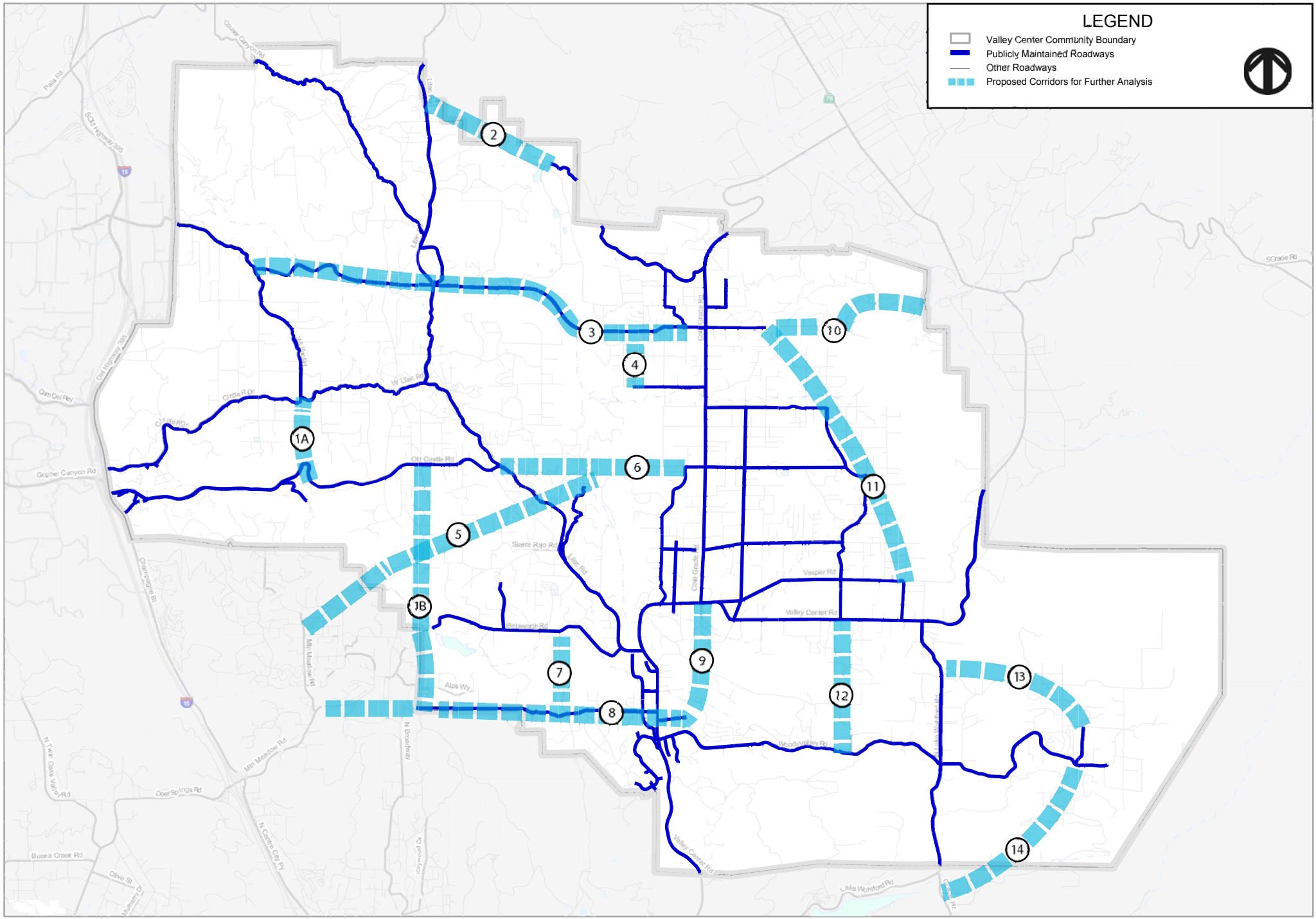

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Figure 4-1
VALLEY CENTER - POTENTIAL EVACUATION CORRIDORS
County of San Diego Community Evacuation Route Study

5.0 Relevant State and Local Standards

This chapter provides a general overview of the relevant state and local codes and regulations related to and governing emergency access and evacuation. The following information was derived from the *County of San Diego Public & Private Roadway Standards* and *County of San Diego Fire Code and County of San Diego Consolidated Fire Code*.

5.1 County Fire Code and County Consolidated Fire Code

Development projects with inadequate access (e.g. long roads with a single access point, roads over steep grades, improper road surfaces, and/or narrow roads) can significantly contribute to the inability to effectively evacuate residents during an emergency. Adequate access is not only necessary for local evacuations, but also necessary to provide emergency access for fire, ambulance, or law enforcement personnel.

The *County Fire Code and County Consolidated Fire Code* detail the minimum design elements and standards for all fire access roads including roadway width, longitudinal slope, and minimum curve radius. These standards are described in the table below.

Classification	Graded Width	Road Surface Width	Min. Curve Radius	Maximum Grade
Fire Access Road	**24'**	**24'**	**200'**	**20%**

Source: County Fire Code and County Consolidated Fire Code

Maximum Length of Dead-End Roads

The allowable length of a dead-end road is limited by the *County Fire Code and County Consolidated Fire Code* to ensure that firefighters have access flexibility to deal with changing dynamics in wildfires and other emergencies, and that civilians have safe, reliable and known evacuation alternatives during emergencies. The allowable length of dead-end roads is a function of zoned parcel size, with larger parcels allowed longer access roads; however, where a dead-end road crosses areas of differing zoned parcel sizes requiring different length limits, the shortest allowable length shall apply. The intent is to limit the number of persons attempting to evacuate on a single roadway and the time needed for a safe evacuation. Steep, narrow and winding roads can delay an evacuation. Long dead-end roads in rural wildland areas can place people and emergency personnel at increased risk.

Access Roadway Width

The minimum roadway width as identified in the *County of San Diego Public & Private Road Standards, County Fire Code and County Consolidated Fire Code* should remain unobstructed and available for use at all times. The County Fire Code and County Consolidated Fire Code allow the Fire Officials to modify the minimum required road widths (for documented cause supported by material facts and accompanied by appropriate mitigation) if it is determined that the

modification does not impair emergency access or operations. In no case shall a modification be authorized that would tend to lessen the health, life and/or fire safety requirements.

Access Roadway Grades

The grades of designated fire access roads must be in full compliance with the standards set forth in the *County of San Diego Fire Code and County Consolidated Fire Code*. The grade requirements are based largely on the ability of an emergency vehicle to maintain proper speed, line-of-site, to get proper traction at a standstill and, to a lesser degree, on the potential for fire hose or other equipment to spill out of the engine because of extreme grades.

Access Roadway Surface Type

The *County of San Diego Fire Code and County Consolidated Fire Code* stipulates that access roads shall be designed and maintained to support the imposed loads of fire apparatus (not less than 50,000 lbs.) and shall be provided with an approved surface so as to provide all-weather driving capabilities.

5.2 County of San Diego Public & Private Road Standards

The *County of San Diego Public & Private Road Standards* details the design elements and standards for all County public roads, including arterial, collector, and local roadways. A minimum requirement of a two lane roadway indicates either a Rural Collector or a Rural Residential classification. Both of these roads are 2-lane roads (one 12' lane in each direction) plus a 2' paved shoulder on each side for a total paved width of 28'. The roadway design speed is 30 mph with the road centered within a 48' wide right-of-way which includes a 10' parkway on each side. The Rural Collector classification is bounded by a maximum 12% longitudinal slope, a minimum centerline curve radius of 300', and is for use only in areas with lots greater than 2 acres and no demand for on-street parking. The Rural Residential classification is bounded by a maximum 15% longitudinal slope and a minimum centerline curve radius of 200'.

The standards for these roads are described in the table below, including a description of road surface width, longitudinal grade and minimum curve radius.

Classification	# Lanes/ Width	R/W	Road Surface Width
Rural Collector	**2/12'**	**48'**	**28'**
Rural Residential	**2/12'**	**48'**	**28'**

Source: County of San Diego Public Road Standards

The County Roadway Design Standards also detail the design elements and standards for all County private roads dependent on average daily traffic (ADT). There are two options for private roads, those serving 750 or less ADT and those serving 751-2500 ADT. Any road serving more

than 2500 ADT must follow the Public Road Standards. Both roads would be 2-lane roads and the other standards are detailed in the table below.

Classification	Graded Width	Road Surface Width	Min. Curve Radius	Design Speed	Maximum Grade
750 ADT or Less	**32'**	**24'**	**200'**	**25 MPH**	**15%**
751-2500 ADT	**32'**	**24'**	**300'**	**30 MPH**	**15%**

Source: County of San Diego Private Road Standards

The road standards described in the Consolidated Fire Code are all met or exceeded by the Rural Collector and Rural Residential roads listed in the County Public Road Standards as well as the minimum roadway design in the Private Road Standards. Therefore the roads standards from the County Public and Private Road standards are adequate to satisfy the Consolidated Fire Code.

6.0 Evacuation Corridor Roadway Classification Scheme

This chapter documents the potential evacuation route roadway classifications (and related public roadway design standards) appropriate for and supportive of emergency evacuations within the unincorporated portions of the County of San Diego. Subject to future considerations and evaluations, these classifications would provide the basis for the future design of roadways designated as emergency evacuation routes.

6.1 Design Basis and Objectives

The community needs assessment identified a number of findings and conclusions regarding evacuation needs in the unincorporated portions of the County of San Diego:

1. Lack of a comprehensive, fully connected roadway network can result in severe traffic congestion or blocked routes of ingress that limit the timely response of emergency vehicles or trap residents trying to depart during an emergency.
2. Inadequate roadway widths and turning radii can make it difficult to maneuver rescue equipment during an emergency. Dead-end and one-way roads can impair emergency access and cause delays.
3. Gates can obstruct access for emergency vehicles and obstruct egress routes for residents departing in the event of an emergency.
4. Private roads have potential to impair emergency access as they can be unpaved and poorly maintained. Poorly maintained roads can cause damage to emergency vehicles, and/or impede access to a site.

Gate at the southern end of the Water District Private access road Corridor 1B

The designation of a roadway classification scheme will need to address and consider each of the above needs and issues. The overriding key to implementing a network of evacuation routes is the need to ensure both the suitability and availability of individual emergency evacuation routes. Proper roadway design in terms of width, grades, and turning radii, along with an adequate level of maintenance will ensure the suitability of the routes for emergency evacuation purposes. Designations of publicly accessible roadways and elimination of gates and other obstructions will ensure the availability of the routes for emergency evacuation purposes.

6.2 Relevant Classifications/Design Standards and Potential Design Exceptions

Understanding the intended function of the roads to be proposed as evacuation routes is critical to determining the appropriate road classification. Based upon discussions with County staff (Department of Planning and Land Use, Public Works, and County Fire), it was determined that the width of evacuation roadways would need to be the minimum allowable for two (2) vehicles to

pass each other, basically a two-lane roadway with minimum shoulders within an appropriate right-of-way in compliance with Public Road Standards. Roadway surface would be dependent upon the location and anticipated use of the roadway. Curbs, berms, sidewalks and such would not be necessary. The list of road classifications from the County Public Road Standards applicable for designation to evacuation routes includes the Rural Collector and Rural Residential types. These roadways include two lanes, and a surface width of 28 feet within a 48-foot wide right-of-way.

During the course of the study, members of both the Community Stakeholder Group and the Community Planning Group voiced specific concerns relating to the need for publically designated evacuation roadways, and specifically the resulting design requirements and associated implications, including:

- Excessive roadway widths and right-of-way requirements
- Inducement of additional traffic
- Maintenance and liability
- Impacts to rural community character

As with improvements to the public road network, design exceptions may be necessary under certain circumstances for designated evacuation routes in situations where one or more of the County roadway standards could not be met. The basis of the proposed design and exception would need to be supported on a case-by-case situation by sound engineering judgment along with facts and/or calculations, and be an allowable exception under the Public Road Standards as discussed in Flexibility in County Road Design.
http://www.sdcounty.ca.gov/dpw/docs/roads/FlexibilityInRoadDesign.pdf

Design exceptions would need to be submitted to the County Department of Public Works on a case-by-case basis and would need to be presented, reviewed and approved prior to implementation.

6.3 Roadway Design Options

As noted previously, the overriding key to implementing a network of evacuation routes is the need to ensure both the suitability and availability of individual emergency evacuation routes. Proper roadway design in terms of width, grades, and turning radii, along with an adequate level of maintenance will ensure the suitability of the routes for emergency evacuation purposes. Designations of publicly accessible roadways and elimination of gates and other obstructions will ensure the availability of the routes for emergency evacuation purposes.

The preferred approach relies upon an expanded network of new public roadways based upon the County's Roadway Design Standards (Rural Collectors and Rural Residential Roadways). As noted previously, conformance with these roadway classifications could present right-of-way and related design issues to the local community; however, conformance with applicable Public Road Standards or allowable exceptions must be met for a road to be classified as an evacuation route.

This document identifies potential evacuation routes so that funding can be sought for improvements that would upgrade these roads to designated evacuation routes.

Advance implementation of Mobility Element Roadways – The updated Mobility Element identifies a number of new arterial and collector level roadway connections in Valley Center:

- Completion of Mirar de Valle to the Hidden Meadows Subregional Group Area.
- Construction of an east/west roadway spanning the northern section of the CPA (New Road 3).
- Construction of Local Public and Mobility Element roadways within the North and South Villages (New Roads 11, 14, 17 and 19).

Implementation of the above roadways will improve the overall connectivity of the respective roadway networks and provide additional options for evacuations during times of emergencies. As such, advancing implementation of these key roadways should be pursued consistent with their classification within the updated Mobility Element.

Expanded Network of Local Public Roads – The updated Mobility Element includes implementation of relatively few new local public roads. The evacuation needs of the community could be addressed through implementation of a more robust network of local public roads, improving local connectivity and circulation. Many of the identified evacuation corridors could be implemented as new local public roadways.

Potential design parameters for these roads are included in the table below. These preliminary design parameters meet the County Fire Code and County Consolidated Fire Code design standard for road widths, but do not satisfy the minimum right-of-way requirements for a local public roadway in the Public Road Standards. At this time, the application of these preliminary design parameters to specific corridors would need to be determined on a case-by-case basis using the above described design exception process.

Preliminary Design Parameters for Evacuation Routes

Classification	# Lanes/ Width	R/W	Surface Width
Evacuation Route A	**2/12'**	**28'**	**24'**
Evacuation Route B	**2/12'**	**32'**	**28'**
Evacuation Route C	**3/12'**	**40'**	**36'**

South end of Corridor 1A, looking north

Community Access Easements – Valley Center includes an extensive number of private roads, many with restricted access, limited improvements, and lack of regular maintenance. If these roads are dedicated to the County they would need to be brought up to Public Road Standards. If gates are present, they would need to be removed. This may not always be a feasible alternative due to funding limitations for road upgrades and maintenance or a lack of community support for a road built to Public Road Standards in very rural areas.

An alternative to implementation of publically dedicated roadways for evacuation purposes would be provision of community access easements utilizing existing private roadways where property owners dedicate an easement that would make the road available during emergencies. Private roadways with a community access easement would only need to be brought up to the applicable and specified County standards if dedicated to the County and recognized as evacuation routes. If not maintained by the County, provisions for on-going maintenance by an entity such as a home owners association (HOA), maintenance district, or equivalent would need to be instituted. However, these routes would not be recognized as County-designated evacuation routes. Grading and surface type could vary depending upon location and projected utilization (ADT). These roads could be considered potential emergency evacuation routes and identified as grant funding candidates to improve the condition of the roadway; constructed to either Public Road Standards or some lesser condition. This allows for improvements to a more comprehensive network. Since the entire roadway would not need to be brought up to County Public Road Standards, then funding could be sought for localized improvements to a segment of the road rather than the entire roadway. This would improve the accessibility of the overall network for use during emergency evacuations.

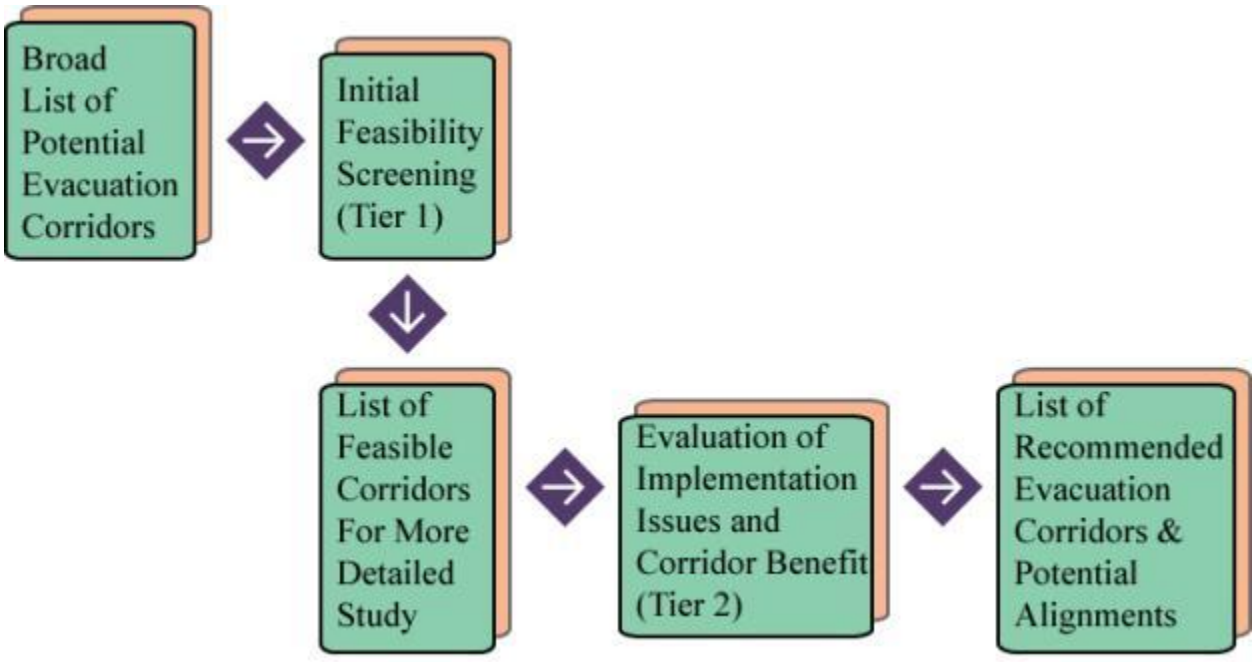
However, it is very important to note that these routes could not be designated as evacuation routes unless brought up to County Public Road Standards.

7.0 Corridor Evaluation Process

This chapter presents the results of the preliminary evaluation of the evacuation corridor alignments and associated engineering and environmental issues that could have an effect on implementation. Preliminary cost estimates and a review of evacuation benefits associated with each of the potential evacuation corridors are also provided.

7.1 Overview of Corridor Evaluation Process

The evacuation corridor evaluation process utilized a two (2) tiered screening process, initially taking a more generalized look at the feasibility of evacuation corridors, followed by a more detailed look at the alignment options, costs and benefits of the more feasible corridors. The flowchart below graphically depicts the evacuation corridor evaluation process.



The corridor evaluation process was conducted in a manner to narrow down the initial broader list of potential evacuation corridors (displayed in Figure 4-1) to a more manageable set of feasible corridors for further evaluation. The evaluation process initially screened out clearly infeasible corridors due to topography, environmental constraints, and/or likely cost constraints, with the intent of defining a set group of corridors for the Valley Center community that show reasonable promise in accommodating new evacuation roadways and connections.

Table 7.1 displays the evaluation criteria associated with each tier of the evacuation corridor evaluation process.

Table 7.1
Corridor Evaluation Criteria by Tier

Tier	Evaluation Criteria
1. Initial Screening	• Engineering and implementation feasibility • Major environmental effects • Compatibility with the Updated County General Plan
2. Detailed Screening	• Evacuation benefits/effectiveness • Engineering constraints • Environmental compatibility • Conceptual construction costs

7.2 Tier 1 Screening Results

This section summarizes the initial corridor screening results and identifies the evacuation corridors which were selected for further analysis as part of the Tier 2 evaluation process.

Scoring and Ranking

The following criteria were applied as part of the initial corridor screening process:

- **Engineering Feasibility** – including topography and cost considerations
- **Implementation Constraints** – consideration of right-of-way and alignment availability and potential issues associated with land ownership
- **Significant Environmental Effects** – consideration of potential impacts to sensitive habitats, wetlands, and/or conserved lands
- **Compatibility with the Updated County General Plan** – including whether or not corridor had been or is currently part of previous and/or current County General Plans.

The corridors were scored on a ++ /- - basis, with ++ representing a very positive score, + being positive, zero (0) being neutral in regard to the criteria, - being negative, and - - representing a very negative score. For each evacuation corridor, the individual criteria scores were summed to derive a composite score for the corridor as a whole. The resulting composite scores for the evacuation corridors were then arrayed to assist in identifying those corridors for elimination from further study. The worksheets summarizing the Tier 1 evaluation criteria scoring results for the individual evacuation corridors in Valley Center are included in **Appendix A.**

Tier 1 Evaluation Results

The community evacuation corridors recommended for either further study or elimination from further study are identified and discussed below.

Of the 14 evacuation corridors evaluated in Valley Center, a total of ten were retained for further study as listed in **Table 7.2**. In a number of cases, based upon findings of feasibility, the retained corridors included partial or modified segments from the initial corridors. For example, only portions of Corridor 1 were determined to be feasible and were subsequently re-identified as Corridors 1A and 1B.

Table 7.2
Valley Center Evacuation Corridors for Further Study

Corridor	Segment	Composite Score
Corridor 1A	West Lilac Road to Old Castle Road	+1
Corridor 1B	Old Castle Road to Mirar De Valle	+1
Corridor 2	Lilac Road to Cole Grade Road	+3
Corridor 3	West Lilac Road to Cole Grade Road	+3
Corridor 4	West Oak Glen Road to Hilldale Road	+5
Corridor 7	Betsworth Road to Mirar De Valle	+4
Corridor 8	Mountain Meadow Road to Valley Center Road	+6
Corridor 11	Pauma Heights Road to Vesper Road	+6
Corridor 12	Valley Center Road to Woods Valley Road	+4
Corridor 14	Paradise Mountain Road to Guejito Road	+1

Figure 7-2 graphically displays the evacuation corridors in Valley Center which were identified for further more detailed evaluation as part of Tier 2.

The following summarizes the evacuation corridors in Valley Center which were not recommended for further study:

- **Corridor 5 - Mountain Meadow Road to Evacuation Corridor 6** – This corridor traverses some fairly significant topographic features, likely to result in costly and difficult implementation. There would also be the potential for significant environmental impacts

due to the presence of localized wetlands and drainage areas. There are no existing unimproved roadways in the corridor, hence acquisition of new right-of-way would also be required.

- **Corridor 6 – Lilac Road to Cole Grade Road** – This corridor traverses some fairly significant topographic features along the central portion of the corridor, likely to result in costly and difficult implementation.

- **Corridor 9 – Valley Center Road to Cole Grade Road** – The presence of significant topographic features along this corridor would make implementation difficult and costly.

- **Corridor 10 - Cole Grade Road to SR-76** – The corridor traverses some fairly significant topographic features along the eastern portion, likely to result in costly and difficult implementation. This would make the connection to SR-76, while desirable, very difficult to implement. There would also be the potential for significant environmental impacts due to the presence of localized wetlands and drainage areas. There are limited existing roadways within the eastern portions of the corridor, hence some acquisition of new right-of-way would be required and costly.

- **Corridor 13 – North Lake Wohlford Road to Los Hermanos Ranch Road** – This corridor would traverse Tribal lands and would likely result in right-of-way conflicts/impacts.

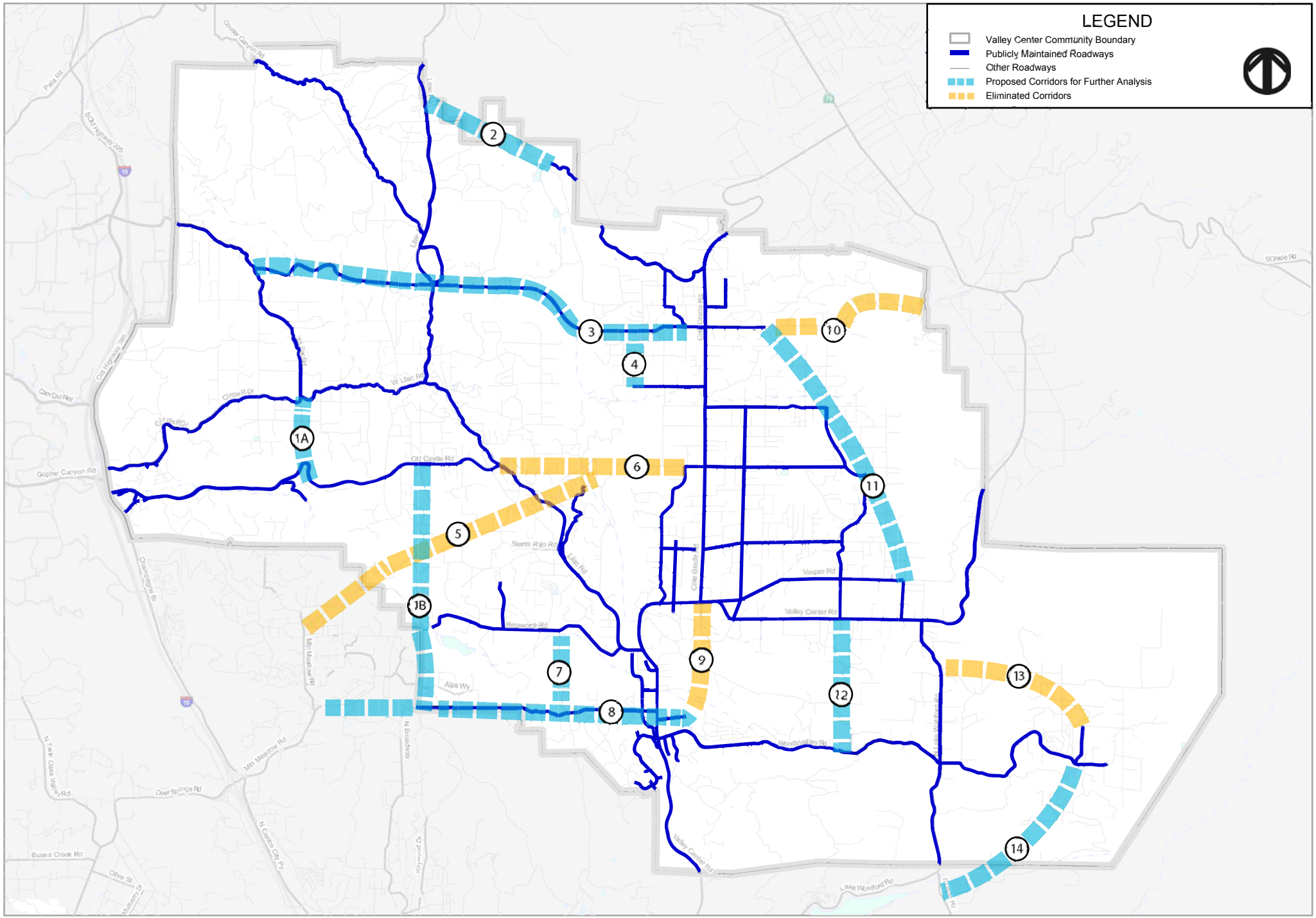


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Figure 7-1
VALLEY CENTER - PRELIMINARY CORRIDOR ANALYSIS
County of San Diego Community Evacuation Route Study

7.3 Tier 2 Feasibility Evaluations

This section presents the results of the Tier 2 feasibility evaluations, including description of the preliminary evacuation corridor alignments, the associated engineering and environmental assessments, along with an estimate of the implementation costs and benefits associated with each of the evacuation corridors.

Preliminary Evacuation Corridor Alignments

For purposes of the feasibility assessment, a preliminary alignment was identified for each evacuation corridor. A review of both the horizontal and vertical features of the various alignments was then undertaken to identify potential physical constraints, such as steep grades, available/conflicting rights-of-way, and related physical obstructions. Figures documenting both the horizontal and vertical features associated with the preliminary corridor alignments are provided in **Appendix B**.

In laying out the various alignments within the evacuation corridors, a number of design assumptions were applied:

- Two-lane roadway (Rural Collector or Rural Residential)
- 12 foot travel lanes and surface width of 28 feet
- Paved/all weather surface provided on new segments of roadway
- Use of existing roadways/rights-of-way wherever possible

It is important to note that the identified alignments as shown are very preliminary in nature, and are only intended to be illustrative of one particular option among potentially many in locating the physical roadway within the more broadly defined evacuation corridors. For the most part, the illustrated alignments represent utilization of existing roadways without regard to ownership and/or right-of-way availability. Ultimately, the preferred alignments will need to be identified based upon much more detailed engineering and environmental studies than the considerations undertaken thus far at this very preliminary stage in the process.

Conceptual Construction Costs

Based upon the review of the individual corridor alignments, estimates of the construction costs associated with each of the evacuation corridors were developed as displayed **Table 7.3.** Estimates are for construction only, inclusive of such items as earthwork, surfacing, utilities, permitting, etc. with a 30% contingency. Pavement and/or all-weather surfacing was assumed only on new/non-existing roadway segments. The costs as presented also do not include any right-of-way costs or associated acquisitions.

Table 7.3
Corridor Evacuation Routes
Conceptual Construction Costs

Corridor	Alignment Length (miles)	Construction Costs
1A: West Lilac Road to Old Castle Road	1.61	$1,400,000
1B: Mirar De Valle to Old Castle Rd	3.41	$4,700,000
2: Lilac Road to McNally Road	2.08	$3,400,000
3: West Lilac Road to Cole Grade Road	7.65	$11,100,000
4: Hilldale Road to West Oak Glen Road	0.70	$600,000
7: Mirar De Valle Road to Betsworth Road	1.65	$2,900,000
8: Mountain Meadow Road to Valley Center Road	5.00	$2,800,000
11: Pauma Heights Road to Vesper Road	4.00	$2,200,000
12: Valley Center Road to Woods Valley Road	2.05	$1,600,000
14: Guejito Road to Paradise Mountain Road	4.20	$6,100,000

Source: AECOM; April 2011

As shown, estimated construction costs range from a low of $0.6 Million for Corridor 4 - Hilldale Road to West Oak Glen Road, to a high of **$**11.1 Million for Corridor 3 - West Lilac Road to Cole Grade Road. More detailed costing sheets for each of the Tier 2 evacuation corridors are included in **Appendix C**.

Environmental Review

The initial evaluation of potential environmental impacts was generally based on the CEQA initial study checklist. Each of the proposed evacuation corridors and alignments were compared against GIS base layer data under the assumption that the project would involve only the construction of emergency evacuation roads as displayed in the illustrative alignment drawings, and would not include any major structures, additional lighting, or related encroachment beyond the roadway itself. GIS data for cultural resources were not available; however, there could be some unknown impacts.

Based on this cursory evaluation of GIS data, there would be no significant impacts that would severely impact the likelihood of approval and implementation. The potential for minor to moderate impacts does, however, exist in a number of areas, as described below:

Aesthetics

Potential aesthetic impacts could occur in areas where construction of the roadway alignment require cut and fill activity, resulting in corresponding visual impacts. This could result in areas with more significant topographic features including steep slopes and grade variations.

Agriculture

The potential for impacts to agricultural resources could occur in areas where the alignments traverse land use designations associated with the Farmland Mapping & Monitoring Program (FMMP), National Wetlands Inventory land, and the County's Multiple Species Conservation Program (MSCP).

Air Quality

Air quality impacts would be anticipated during construction; however, these impacts would be temporary and would require the most basic of mitigation measures during construction.

Biological Resources

The potential for impacts to biological resources would occur in areas of sensitive wildlife habitat and wetland areas. Biological impacts would likely require mitigation in the form of monitors on-site during construction and possibly post-construction mitigation/restoration if encroachments were required. Approximate costs for mitigation in these areas would likely range from $40,000 - $60,000 per acre, including an assumed one-year establishment and potentially five years of monitoring. Pre-Approved Mitigation Area (PAMA) boundaries are somewhat flexible and minor encroachments can generally be completed without major mitigation issues.

Land Use & Planning

Potential land use and planning impacts could occur in situations where implementation of the evacuation corridor and the associated changes in local accessibility lead to additional growth and development, and associated changes to the community character. This would be dependent on the nature of existing and planned land uses, changes in individual parcel accessibility, and changes in local travel patterns.

Noise

Noise impacts would be anticipated during construction; however, these impacts would be temporary and would require the most basic of mitigation measures during construction.

Transportation and Traffic

Potential transportation and traffic impacts could occur as the result of increased traffic volumes on local streets and/or resulting capacity issues on Mobility Element roadways.

Figures 7-3 through **7-12** display the preliminary corridor alignments, including a brief corridor description and documentation of the potential environmental issues associated with the evacuation corridors.

Figure 7-2 Corridor 1A – West Lilac Road to Old Castle Road

Length: 1.61 Miles
Construction Cost: $1.4 Million

Description: This corridor addresses the need for additional north-south roadway connections between Old Castle Road and West Lilac Road. The approximately 1.6 mile long alignment would utilize mostly existing roadways of varying size and surface. From the south (Old Castle Rd) the proposed alignment follows Castle Heights Drive which would need to be widened 8'-10'. The alignment then traverses approximately 200 feet of undisturbed area that would require a full paving section, followed by an approximate 1,100 foot long existing asphalt road which would need to be widened by 6'-8'. Use of an approximate 800 foot long dirt road follows and would also need to be widened and paved. The last piece of the alignment includes Spearhead Trail, an approximately 2,400' asphalt roadway which would need to be widened 8'-10'.

Preliminary Environmental Assessment

- **Aesthetics:** Topographic constraints could result in moderate levels of construction related cut-and-fill activity and associated visual impacts.
- **Agriculture:** Corridor 1A traverses FMMP land designated as Unique Farmland and Farmland of Local Importance. However, with the use of existing roads and trails, the anticipated impact would be less than significant.
- **Air Quality:** Temporary impacts from construction.
- **Biological Resources:** Corridor 1A is located adjacent to seasonal wetlands recognized by the National Wetlands Inventory (less than 0.05 miles). Mitigation/Restoration would likely be needed, including biological monitoring during construction.
- **Cultural Resources:** No anticipated impacts.
- **Geology:** No anticipated impacts.
- **Hazards and Hazardous Materials:** No anticipated impacts
- **Hydrology and Water Quality:** No anticipated impacts
- **Land Use and Planning:** Corridor 1A is intended to improve regional access with no significant effects on local access, with minimal effects on the development potential of surrounding land uses.
- **Noise:** Temporary impacts from construction.
- **Transportation and Traffic:** Improvement to Corridor 1A would connect two Mobility Element roadways and would traverse a semi-rural area, with the potential to result in moderate to high traffic demands.

Summary of Potential Mitigation Requirements: Corridor 1A could result in a moderate to high level of traffic volumes. Corridor 1A may affect agricultural resources and land use planning. Temporary impacts to air quality and noise may also be anticipated. Some minor mitigation may be required.

Figure 7-3 Corridor 1B –Mirar De Valle to Old Castle Road

Length: 3.41 Miles

Construction Cost: $4.7 Million

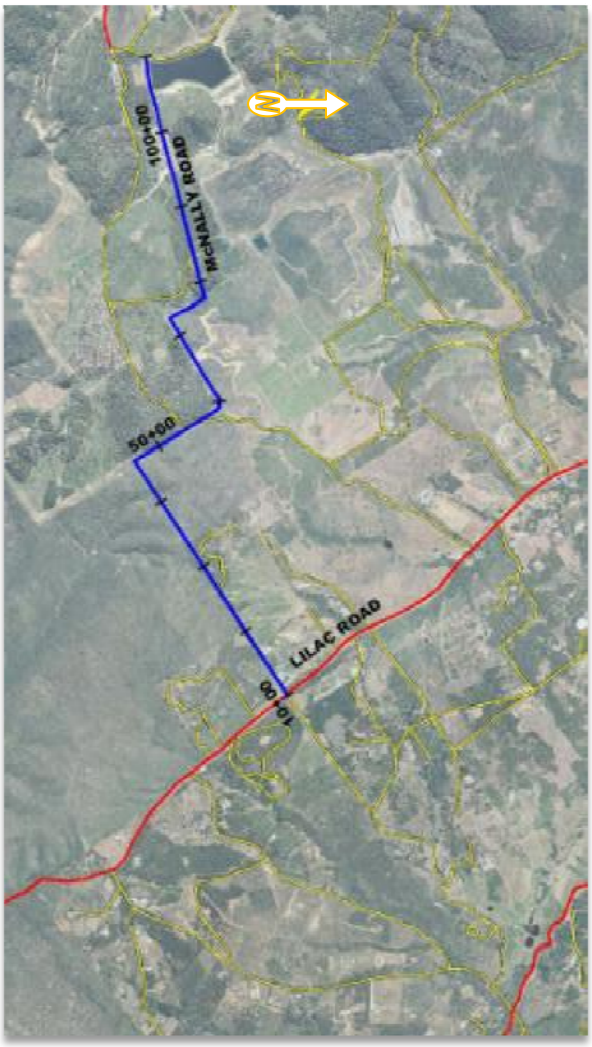
Description: This corridor addresses the need for additional north-south roadway connectivity between Mirar De Valle and Old Castle Road. The approximately 3.4 mile long alignment would utilize mostly existing roadways of varying size and surface. From the south (Meadow Glen Way East), the proposed alignment follows Cougar Pass Rd (~6,750') which would need to be widened 16'-18'. The alignment then traverses an existing 5,100 foot long dirt road which would need to be widened and paved, followed by a 2,250 foot long asphalt road which would need to be widened 16'-18'. Another approximately 1,300 feet of dirt road follows; then a 2,500 foot long asphalt road which would need 12' of widening.

Preliminary Environmental Assessment

- **Aesthetics:** Topographic constraints could result in moderate levels of construction related cut-and-fill activity and associated visual impacts
- **Agriculture:** Corridor 1B traverses FMMP land designated as Unique Farmland and Farmland of Local Importance. However, with the use of existing roads and trails, the anticipated impact would be less than significant.
- **Air Quality:** Temporary impacts from construction.
- **Biological Resources:** A large portion (over 1.3 miles) of the proposed route is located within the North County MSCP Pre-Approved Mitigation Area. Potential impacts within this area may result in complicating factors
- **Cultural Resources:** No anticipated impacts.
- **Geology:** No anticipated impacts.
- **Hazards and Hazardous Materials:** No anticipated impacts.
- **Hydrology and Water Quality:** No anticipated impacts.
- **Land Use and Planning:** Corridor 1B is located within the MSCP PAMA. However, it is not anticipated to conflict with the applicable land use policy. Corridor 1B is intended to improve regional access with no significant effects on local access, with minimal effects on the development potential of surrounding land uses.
- **Noise:** Temporary impacts from construction.
- **Transportation and Traffic:** Improvement to Corridor 1B would connect two Mobility Element roadways; would traverse a semi-rural area; and provide a connection to a neighboring CPA (North County Metro), with the potential to result in relatively high traffic demands.

Summary of Potential Mitigation Requirements: Corridor 1B could result in a relatively high level of traffic volumes. Corridor 1B may also affect agricultural resources and sensitive biological resources. Temporary impacts to air quality and noise may also be anticipated. Some minor mitigation may be required.

Figure 7-4 Corridor 2 – Lilac Road to McNally Road



Length: 2.08 Miles
Construction Cost: $3.4 Million

Description: This corridor addresses the need for additional east-west roadway connections in the central/northern area of the community. The approximate 2.1 mile long alignment has been laid out utilizing existing roadways with a variety of surface types. Starting from the west (Lilac Rd) there is an approximate 1,700 foot long dirt roadway that would need to be widened and paved. Following that stretch is approximately 5,600 feet of the alignment through an undisturbed area that would require a full paving section, followed by approximately 1,200 feet of dirt road that would require widening and paving. The last section of this route is 2,500' of McNally Road which is paved and needs a 4' widening.

Preliminary Environmental Assessment

- **Aesthetics:** Due to the short length of this corridor, minimal to no aesthetic impacts are anticipated.
- **Agriculture:** Corridor 2 traverses FMMP land designated as Unique Farmland, Farmland of Local Importance, and Farmland of Statewide Importance. However, with the use of existing roads and trails, the anticipated impact would be less than significant.
- **Air Quality:** Temporary impacts from construction.
- **Biological Resources:** No anticipated impacts.
- **Cultural Resources:** No anticipated impacts.
- **Geology:** No anticipated impacts.
- **Hazards and Hazardous Materials:** No anticipated impacts.
- **Hydrology and Water Quality:** No anticipated impacts.
- **Land Use and Planning:** Corridor 2 is intended to improve regional access with no significant effects on local access, with minimal effects on the development potential of surrounding land uses.
- **Noise:** Temporary impacts from construction.
- **Transportation and Traffic:** Corridor 2 would provide a connection between two regional roadway facilities (Cole Grade Road & Lilac Road) through a semi-rural area, with the potential to result in moderate traffic demands. Also, a benefit is that the route would provide connectivity so than McNally would no longer be a dead-end road.

Summary of Potential Mitigation Requirements: Corridor 2 could result in a moderate level of traffic volumes. Corridor 2 may also affect agricultural resources. Temporary impacts to air quality and noise may also be anticipated. Some minor mitigation would likely be required.

Figure 7-5 Corridor 3 – West Lilac Road to Cole Grade Road

Length: 7.65 Miles

Construction Cost: $11.1 Million

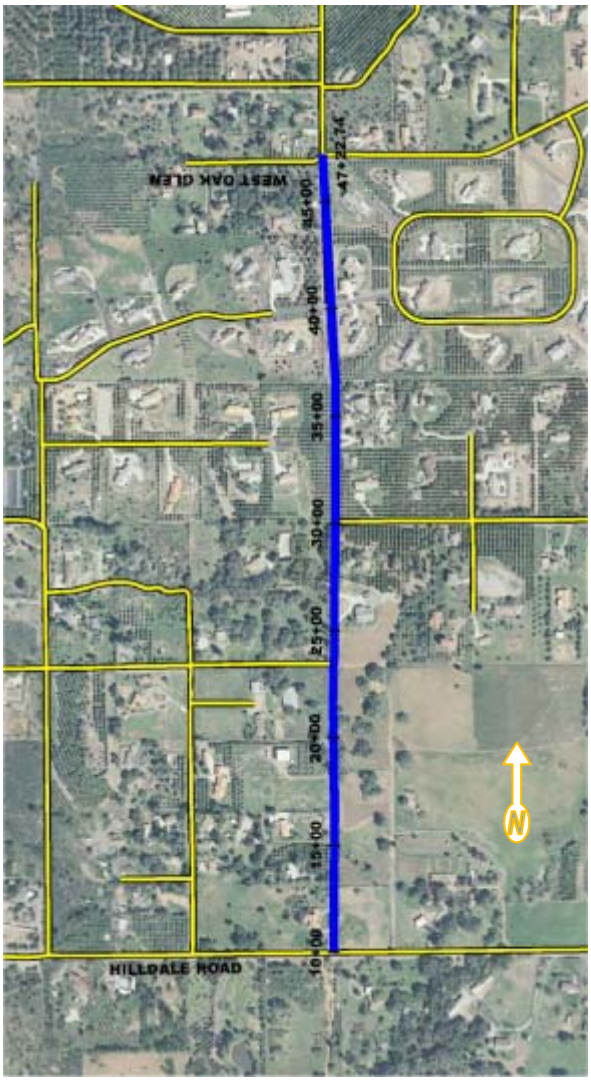
Description: This corridor addresses the need for a continuous east-west connection between Cole Grade Road and Lilac Road. This approximately 7.65 mile long alignment has been laid out utilizing existing roadways with a variety of surface types. Starting from the west (West Lilac Rd), the proposed alignment would follow Running Creek Road for approximately 3,300' and would need 10' of widening. Following that is approximately 33,000' of dirt road (with varying widths from 5'-28') which would need to be widened and paved. The last section of this alignment includes 3,300' of West Oak Glen Road which is paved and needs a 2'widening.

Preliminary Environmental Assessment

- **Aesthetics:** Due to major topography constraints, construction activity could require significant cut-and-fill activity, resulting in higher potential for visual impacts.
- **Agriculture:** Corridor 3 traverses FMMP land designated as Unique Farmland, Farmland of Local Importance, and Farmland of Statewide Importance. However, with the use of existing roads and trails, the anticipated impact would be less than significant.
- **Air Quality:** Temporary impacts from construction.
- **Biological Resources:** Corridor 3 traverses Keys Creek and riparian woodland recognized by the National Wetlands Inventory. Mitigation/Restoration would likely be needed, including biological monitoring during construction.
- **Cultural Resources:** No anticipated impacts.
- **Geology: N**o anticipated impacts.
- **Hazards and Hazardous Materials:** No anticipated impacts.
- **Hydrology and Water Quality:** Corridor 3 would cross a FEMA 100-year flood zone. However, since the road would not place housing or structures within said area, significant impacts are not anticipated.
- **Land Use and Planning:** Corridor 3 is intended to improve regional access with no significant effects on local access, with minimal effects on the development potential of surrounding land uses.
- **Noise:** No anticipated impacts.
- **Transportation and Traffic:** Corridor 3 is a Mobility Element roadway facility that would provide a major east/west connection throughout the community, with the potential for relatively high traffic demands.

Summary of Potential Mitigation Requirements: Corridor 3 could result in relatively high traffic demands. Corridor 3 may also affect agricultural resources and would likely have a significant impact on biological resources. Temporary impacts to air quality and noise may also be anticipated. Some mitigation would likely be required.

Figure 7-6 Corridor 4 – Hilldale Road to West Oak Glen Road



Length: 0.70 Miles

Construction Cost: $0.6 Million

Description: This corridor addresses the need for additional local access and roadway connectivity in the northern/central area of the community. This approximately 0.70 mile long route would utilize a variety of existing paved and dirt surfaces. Starting from the south (Hilldale Road,) the illustrative alignment follows an existing asphalt road for ~3,000' requiring 8'-10' of widening. The last ~700' of the alignment follows a dirt road which would need to be widened and paved.

Preliminary Environmental Assessment

- **Aesthetics:** Due to the short length of this corridor, minimal to no aesthetic impacts are anticipated.
- **Agriculture:** Corridor 4 traverses FMMP land designated as Unique Farmland and Farmland of Local Importance. However, since the proposed corridor follows existing roads, the anticipated impact is less than significant.
- **Air Quality:** Temporary impacts from construction.
- **Biological Resources:** No anticipated impacts.
- **Cultural Resources:** No anticipated impacts.
- **Geology:** No anticipated impacts.
- **Hazards and Hazardous Materials:** No anticipated impacts.
- **Hydrology and Water Quality:** No anticipated impacts.
- **Land Use and Planning:** Corridor 4 would provide additional access to the Oak Glen neighborhood and could serve as an alternative route to the High School, which may allow for additional development within the neighborhood.
- **Noise:** No anticipated impacts.
- **Transportation and Traffic:** Improvement to Corridor 4 would provide additional access to the Oak Glen neighborhood, resulting in relatively low traffic demands.

Summary of Potential Mitigation Requirements: Corridor 4 may affect agricultural resources. Temporary impacts to air quality and noise may also be anticipated. Some mitigation may be needed.

Figure 7-7 Corridor 7 – Mirar De Valle Road to Betsworth Road

Length: 1.65 Miles

Construction Cost: $2.9 Million

Description: This corridor addresses the need for additional roadway connections between Betsworth Road and Mira De Valle Road. This approximately 1.65 mile long route would utilize a variety of existing paved and dirt surfaces. Starting from the south (Mirar De Valle Road), the alignment would follow an existing dirt road for ~1,900' and would require widening and pavement, followed by approximately ~200' of paved roadway which would need to be widened by 16'. The last ~6,400' of the alignment is along a dirt road that would also need to be widened and paved.

Preliminary Environmental Assessment

- **Aesthetics:** Few topographic constraints exist and minimal aesthetic impacts are anticipated.
- **Agriculture:** Corridor 7 traverses FMMP land designated as Unique Farmland, Farmland of Local Importance, and Farmland of Statewide Importance. However, with the use of existing roads and trails, the anticipated impact would be less than significant.
- **Air Quality:** Temporary impacts from construction.
- **Biological Resources:** The proposed route is located within the North County Multiple Species Conservation Program's Pre-Approved Mitigation Area.
- **Cultural Resources:** No anticipated impacts.
- **Geology:** No anticipated impacts.
- **Hazards and Hazardous Materials:** No anticipated impacts.
- **Hydrology and Water Quality:** Corridor 7 would cross Moosa Canyon riverbed. However, there are no anticipated impacts to hydrology and water quality.
- **Land Use and Planning:** Corridor 7 is located within the MSCP PAMA. However, road construction is not anticipated to conflict with the applicable land use policy. Corridor 7 is intended to improve regional access with no significant effects on local access, with minimal effects on the development potential of surrounding land uses.
- **Noise:** Temporary impacts from construction.
- **Transportation and Traffic:** Improvement to Corridor 7 would connect two Mobility Element roadways and would traverse a semi-rural area, with the potential to result in moderate traffic demands. With the connection, Betsworth would no longer be a dead-end road.

Summary of Potential Mitigation Requirements: Corridor 7 could result in a moderate level of traffic volumes. Corridor 7 may also affect agricultural resources and would likely have a significant impact on biological resources. Temporary impacts to air quality and noise may also be anticipated. Some mitigation would likely be required.

Figure 7-8 Corridor 8 – Mountain Meadow Road to Valley Center Road

Length: 5.00 Miles

Construction Cost: $2.8 Million

Description: This corridor addresses the need for additional east-west roadway connections serving the southern portions of the community. This 5.0 mile long route, as laid out, would utilize mostly existing paved roads. Starting from the west (Mountain Meadow Road), the first 13,200' includes an asphalt paved road, with varying widening requirements (0'-8'). An approximate 2,650' long dirt path follows and also would require widening and paving. ~5,300' of asphalt paved roadway continues requiring 13' of widening, followed by ~5,250' of Mirar De Valle Road which would not need any further improvement. This alignment has some segments with a turn radii that would not meet Public Road standards and to rectify this would increase construction costs.

Preliminary Environmental Assessment

- **Aesthetics:** Few topographic constraints exist and minimal aesthetic impacts are anticipated.
- **Agriculture:** Corridor 8 traverses FMMP land designated as Unique Farmland and Farmland of Local Importance. However, since the proposed corridor follows existing roads, the anticipated impact is less than significant.
- **Air Quality:** Temporary impacts from construction.
- **Biological Resources:** Corridor 8 abuts USFWS designated critical habitat for Coastal California gnatcatcher. A portion of the proposed route is located within the North County Multiple Species Conservation Program's Pre-Approved Mitigation Area (SanGIS 2006).
- **Cultural Resources:** No anticipated impacts.
- **Geology:** No anticipated impacts.
- **Hazards and Hazardous Materials:** No anticipated impacts.
- **Hydrology and Water Quality:** No anticipated impacts.
- **Land Use and Planning:** A portion of Corridor 8 is located within the MSCP PAMA. However, road construction is not anticipated to conflict with the applicable land use policy. Corridor 8 is intended to improve regional access with no significant effects on local access, with minimal effects on the development potential of surrounding land uses.
- **Noise:** Temporary impacts from construction.
- **Transportation and Traffic:** Corridor 8 is a Mobility Element roadway facility that would provide a major east/west connection throughout the community, with the potential for relatively high traffic demands.

Summary of Potential Mitigation Requirements: Corridor 8 could result in relatively high traffic demands. Corridor 8 may also affect agricultural resources and would likely have a significant impact on biological resources. Temporary impacts to air quality and noise may also be anticipated. Some mitigation would likely be required.

Figure 7-9 Corridor 11 – Pauma Heights Road to Vesper Road

Length: 4.00 Miles

Construction Cost: $2.2 Million

Description: This corridor addresses the need for additional roadway connectivity and enhanced local access along and between Cool Valley Road and adjacent areas. This approximate 4.0 mile long route, as laid out, would utilize mostly existing paved roads. Starting from the north (Pauma Heights Road) the first approximate 1,350' includes a dirt road that would need widening and paving. The alignment would then follow ~6,650' asphalt paved road needing widening from between 4'-16'. The last ~14,400' of the alignment includes paved asphalt needing 0'-4' of widening.

Preliminary Environmental Assessment

- **Aesthetics:** Few topographic constraints exist and minimal aesthetic impacts are anticipated.
- **Agriculture:** Corridor 11 traverses FMMP land designated as Unique Farmland and Farmland of Local Importance. However, since the proposed corridor follows existing roads, the anticipated impact is less than significant.
- **Air Quality:** No anticipated impacts.
- **Biological Resources:** There are no anticipated impacts to biological resources.
- **Cultural Resources:** No anticipated impacts.
- **Geology:** No anticipated impacts.
- **Hazards and Hazardous Materials:** No anticipated impacts.
- **Hydrology and Water Quality:** No anticipated impacts.
- **Land Use and Planning:** Corridor 11 would provide additional access to several neighborhoods in the northeastern portion of the community. Corridor 11 may increase the potential for additional development in the respective neighborhoods.
- **Noise:** Temporary impacts from construction.
- **Transportation and Traffic:** The improvements to Corridor 11 would provide additional access to several neighborhoods in a semi-rural area, with the potential for moderate to high traffic demands.

Summary of Potential Mitigation Requirements: Corridor 11 would provide additional access and may affect the development potential of surrounding land uses and potentially result in moderate to high traffic demands. Corridor 11 may also affect agricultural resources. Temporary impacts to air quality and noise may also be anticipated. Some mitigation may be needed.

Figure 7-10 Corridor 12 – Valley Center Road to Woods Valley Road

Length: 2.05 Miles

Construction Cost: $1.6 Million

Description: This corridor addresses the need for additional north-south roadway connections between Valley Center Road and Woods Valley Road. This approximately 2.1 mile long illustrative alignment would utilize only existing paved roads. Starting from the south (Woods Valley Road), the corridor follows Cool Water Ranch Lane, an asphalt paved road which would require 7'to 12' of widening.

Preliminary Environmental Assessment

- **Aesthetics:** Few topographic constraints exist and minimal aesthetic impacts are anticipated.
- **Agriculture:** Corridor 12 traverses FMMP land designated as Unique Farmland and Farmland of Local Importance. However, since the proposed corridor follows existing roads, the anticipated impact is less than significant.
- **Air Quality:** No anticipated impacts.
- **Biological Resources:** The proposed corridor (along Coolwater Ranch Lane) passes adjacent to Riparian Woodland and Seasonal Wetlands recognized by the National Wetlands Inventory. Mitigation/Restoration would likely be needed, including biological monitoring during construction.
- **Cultural Resources:** No anticipated impacts.
- **Geology:** No anticipated impacts.
- **Hazards and Hazardous Materials:** No anticipated impacts.
- **Hydrology and Water Quality:** A portion of the corridor is in the FEMA Floodway and 100-year flood zone. However, since the road would not place housing or structures within said area, significant impacts are not anticipated.
- **Land Use and Planning:** A small portion of the corridor (southern end, along Coolwater Ranch Road and Woods Valley Road) is in the MSCP PAMA. However, road construction is not anticipated to conflict with the applicable land use policy. Corridor 12 is intended to improve regional access with no significant effects on local access, with minimal effects on the development potential of surrounding land uses.
- **Noise:** Temporary impacts from construction.
- **Transportation and Traffic:** Improvement to Corridor 12 would connect two ME roadway facilities through a rural area, resulting in low to moderate traffic demands.

Summary of Potential Mitigation Requirements: Corridor 12 may affect agricultural resources and would likely have a significant impact on biological resources. Temporary impacts to air quality and noise may also be anticipated. Some mitigation would likely be needed.

Figure 7-11 Corridor 14 – Guejito Road to Paradise Mountain Road

Length: 4.20 Miles

Construction Cost: $6.1 Million

Description: This corridor addresses the need for additional roadway access points to the Paradise Mountain neighborhood. The alignment is part of the current County Circulation Element, but has been deleted from the General Plan Update Mobility Element. As illustrated, this approximately 4.20 mile long alignment would utilize mostly existing dirt roads. Starting from the west (Guejito Road), the route follows Bear Valley Lane, an asphalt road which would need to be widened by 8'-13'. A 500' section follows traversing an undisturbed area which would require a full paving section. The last 13,750' of the alignment utilizes Oak Trail Road, a dirt road which would also require widening and paving. Due to terrain issue, construction would most likely require design exception, such as steeper vertical slope and sharper turn radius.

Preliminary Environmental Assessment

- **Aesthetics:** Due to major topographic constraints, construction activity could require significant cut-and-fill activity, resulting in higher potential for visual impacts.
- **Agriculture:** A portion Corridor 14 (along Bear Valley Lane) abuts FMMP land designated as Unique Farmland and Prime Farmland. However, with the use of existing roads and trails, the anticipated impact would be less than significant.
- **Air Quality:** No anticipated impacts.
- **Biological Resources:** No anticipated impacts.
- **Cultural Resources:** No anticipated impacts.
- **Geology:** No anticipated impacts.
- **Hazards and Hazardous Materials:** No anticipated impacts.
- **Hydrology and Water Quality:** The proposed corridor crosses Escondido Creek. However, there are no anticipated significant impacts to hydrology and water quality.
- **Land Use and Planning:** A large portion of Corridor 14 is located within the MSCP PAMA. However, road construction is not anticipated to conflict with the applicable land use policy. Corridor 14 would provide an additional access point for the Paradise Mountain neighborhood, which could potentially facilitate additional development the within the neighborhood.
- **Noise:** No anticipated impacts.
- **Transportation and Traffic:** Improvement to Corridor 14 would provide an access point for the Paradise Mountain neighborhood. Given the terrain and anticipated alignment, Corridor 14 would have relatively low traffic demands.

Summary of Potential Mitigation Requirements: Corridor 14 would provide additional access and may affect the development potential within the neighborhood. Corridor 14 may affect agricultural resources. Temporary impacts to air quality and noise may also be anticipated. Some minor mitigation would likely be required.

7.4 Corridor Evacuation Benefits and Effectiveness

This section discusses the methodology and results of the evaluation process to determine the relative benefits and effectiveness of the identified evacuation corridors in terms of meeting the emergency evacuation needs of the community. This information will assist the local community and County decision makers in establishing local priorities for subsequent implementation, recognizing the likely limitations on funding.

In order to determine the relative benefits and effectiveness of the proposed evacuation corridors, a number of evaluation measures were utilized:

- **Population Served** – General estimate of the magnitude of population likely to utilize the corridor during an emergency evacuation. For example, a corridor serving higher density locations within the community would have the potential to serve a higher population and would therefore receive a higher ranking under this category. Conversely a corridor traversing and serving the more rural/undeveloped portions of the community would have a lower ranking.

- **Connectivity** – Degree to which the evacuation corridor would provide a key linkage/connection to/from an underserved area(s). For example, implementation of a corridor which provides new and improved connectivity between two existing regional arterials would receive a higher ranking under this category.

- **Access** – Degree to which the evacuation corridor would provide key additional point(s) of access to an area lacking such. For example, implementation of a corridor which provides important secondary/additional access to an underserved subarea would receive a higher ranking under this category.

A ranking system (1 to 5) was utilized in applying each measure, with a score of "5" representing the highest level of potential benefit/effectiveness and a score of "1" representing the least. A score was assigned to each of the evacuation corridors for each of the evaluation measures listed above. The individual scores were then totaled to derive a composite score, as shown in **Table 7.4.**

Table 7.4
Evacuation Corridor Benefit/Effectiveness

#	Corridor	Population Served	Connectivity	Access	Composite Score
1A	West Lilac Road to Old Castle Road	3	4	1	8
1B	Old Castle Road to Mirar De Valle	3	5	5	13
2	Lilac Road to Cole Grade Road	3	5	4	12
3	West Lilac Road to Cole Grade Road	4	5	4	13
4	West Oak Glen Road to Hilldale Road	2	1	4	7
7	Betsworth Road to Mirar De Valle	2	2	2	6
8	Mountain Meadow Road to Valley Center Road	5	4	5	14
11	Pauma Heights Road to Vesper Road	4	4	4	12
12	Valley Center Road to Woods Valley Road	3	2	1	6
14	Paradise Mountain Road to Guejito Road	3	3	5	11

Source: Fehr & Peers, July 2011

As shown, **Corridor 8** – Mountain Meadow Road to Valley Center Road is projected to provide the most benefit/effectiveness potential to the community, with **Corridor 1B** – Old Castle Road to Mirar De Valle, **Corridor 2** – Lilac Road to Cole Grade Road, **Corridor 3** – West Lilac Road to Cole Grade Road, and **Corridor 11** – Pauma Heights Road to Vesper Road, all providing a relatively similar level of benefit/effectiveness potential.

8.0 Implementation Considerations

This concluding chapter provides a preliminary perspective on local implementation issues, community priorities and related factors, and considerations regarding the proposed community evacuation routes.

8.1 Community Priorities

As discussed in the previous sections, there are a range of community evacuation corridors and alignments for possible implementation. Implementation costs will vary, as will the associated environmental impacts and populations served.

It is the intent of the County that the subsequent implementation of any of the evacuation routes be driven by and based upon the expressed desires and needs of each individual local community. To assist in the identification of local priorities, this section summarizes some of the previous findings relating to the evacuation corridors, specifically:

1. Review of the evacuation corridors relative to identified needs
2. Grouping of the evacuation corridors based upon benefits/effectiveness

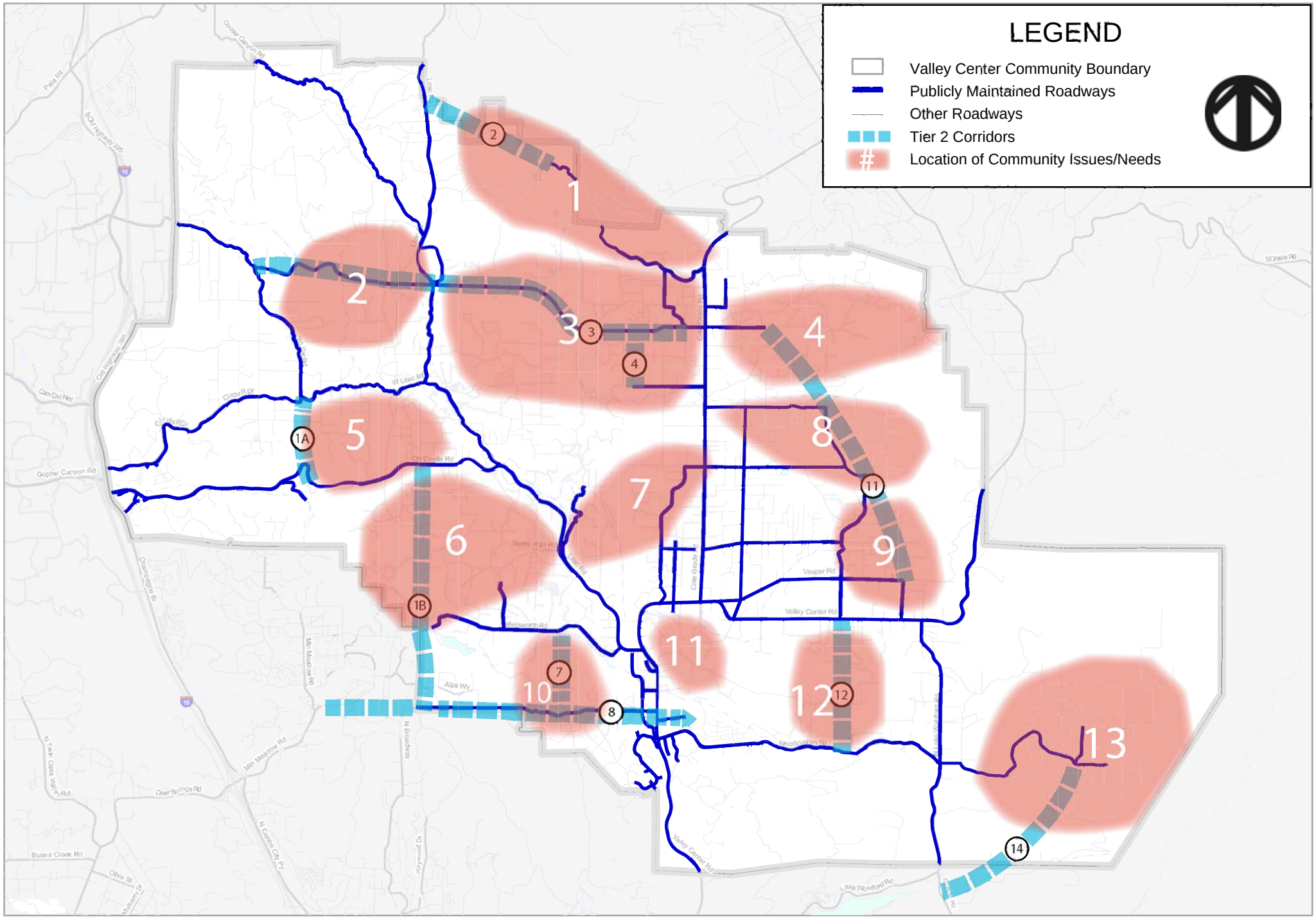
Relationship of Potential Evacuation Corridors to Needs Assessment

Figure 8-1 displays the Tier 2 evacuation corridors in Valley Center overlaid on a graphic displaying the roadway connectivity needs and issues developed during the initial tasks of the Community Evacuation Route Study process. (Reference: Issue Paper #1: Community Evacuation and Roadway Connectivity Needs Assessment).

As shown, the proposed Tier 2 corridors would provide access and connectivity throughout all of the identified areas of need, with the exception of areas 7 & 11. The proposed corridors that would service both of these areas (Corridors 6 and 9) were eliminated under the Tier 1 assessment due to significant topographic constraints and specifically the traversing of steep grades that would be required in order to make the connection. Both of these identified areas of need would be addressed at some level, however, with implementation of nearby parallel corridors, such as Corridors 3 and 12.

Primary/Secondary Potential Evacuation Corridors

The community evacuation corridors in Valley Center were grouped into primary and secondary categories based upon their overall benefit/effectiveness score. The Primary corridor category includes the corridors that are anticipated to provide the most benefit and effectiveness to the community, while the secondary category includes corridors that do provide some level of benefit to the community, but are considered to be secondary alternatives.



FEHR PEERS

FIGURE 8-1
VALLEY CENTER - TIER 2 CORRIDORS
County of San Diego Community Evacuation Route Study

Based upon the evaluations to date and the respective benefit/effectiveness scores, the following six (6) evacuation corridors have been identified as likely to provide the most benefit/effectiveness to the community, and therefore are candidates for consideration as Primary Corridors:

- Corridor1B: providing access between Old Castle Road & Mirar De Valle
- Corridor 2: providing access between Lilac Road & Cole Grade Road
- Corridor 3: providing access between West Lilac Road & Cole Grade Road
- Corridor 8: providing access between Mountain Meadow Road & Valley Center Road
- Corridor 11: providing access between Pauma Heights Road & Vesper Road
- Corridor 14: providing access between Paradise Mountain Road & Guejito Road

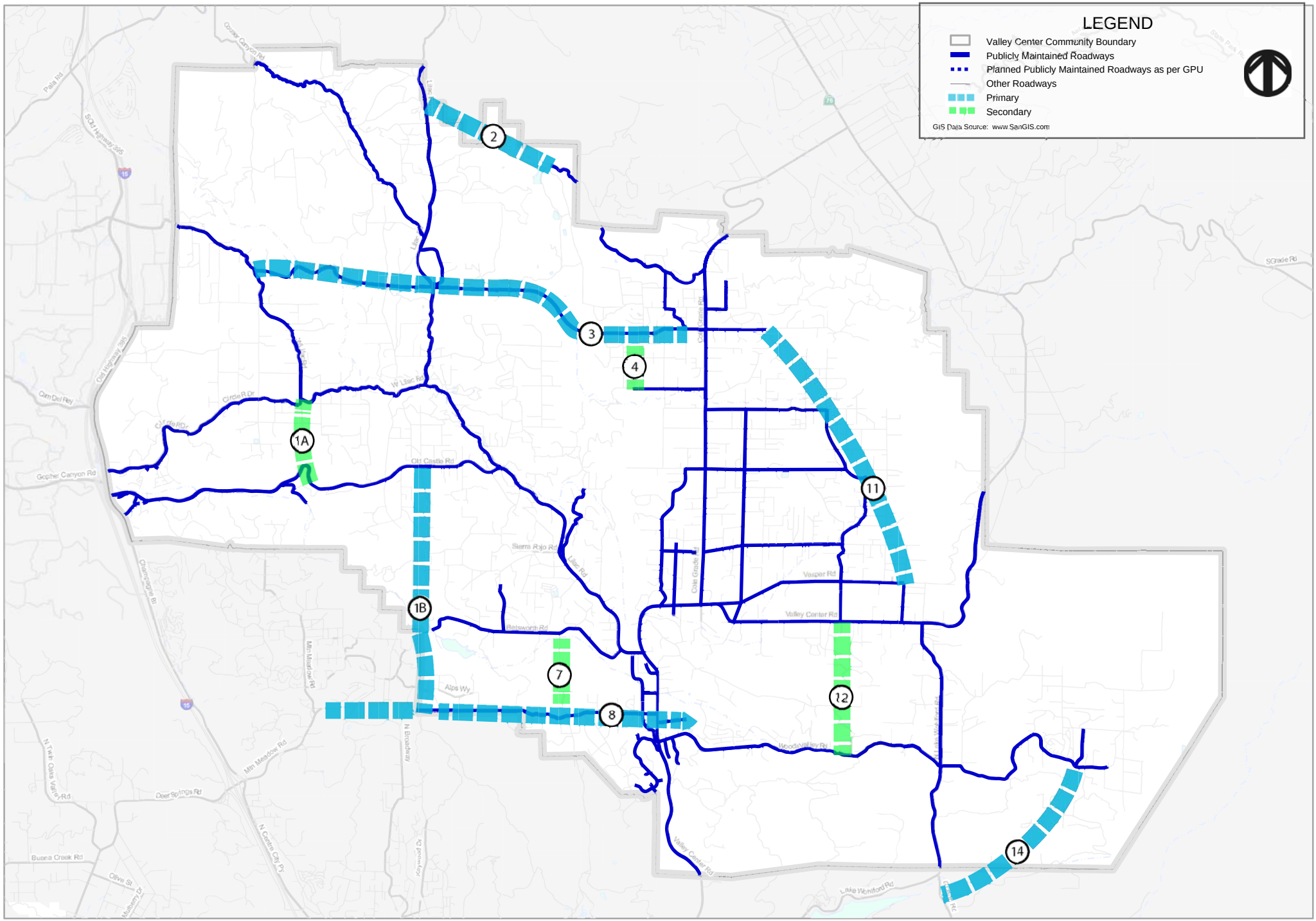
The remaining four (4) evacuation corridors, while still providing benefit/effectiveness to the community, are not anticipated to provide as much benefit/effectiveness as the Primary Corridors, and as such can be considered as Secondary Corridors.

- Corridor1A: providing access between West Lilac Road to Old Castle Road
- Corridor 4: providing access between West Oak Glen Road to Hilldale Road
- Corridor 7: providing access between Betsworth Road to Mirar De Valle
- Corridor 12: providing access between Valley Center Road to Woods Valley Road

Figure 8-2 displays the primary and secondary evacuation corridors for further consideration by the community and County decision makers.

Community Preferences

The Valley Center Stakeholder Review Committee, along with the Community Planning Group Mobility and General Plan Update Subcommittees have endorsed the proposed community evacuation corridors as local public roads built in accordance with the Valley Center J-36 Guidelines, along with the application of design exceptions where appropriate. These recommendations were presented to the full Valley Center Community Planning Group at their October 2011 meeting at which time they expressed their continued concurrence and support that the evacuation corridor recommendations be presented to the County Board of Supervisors for approval and subsequent addition to the local Mobility Element.



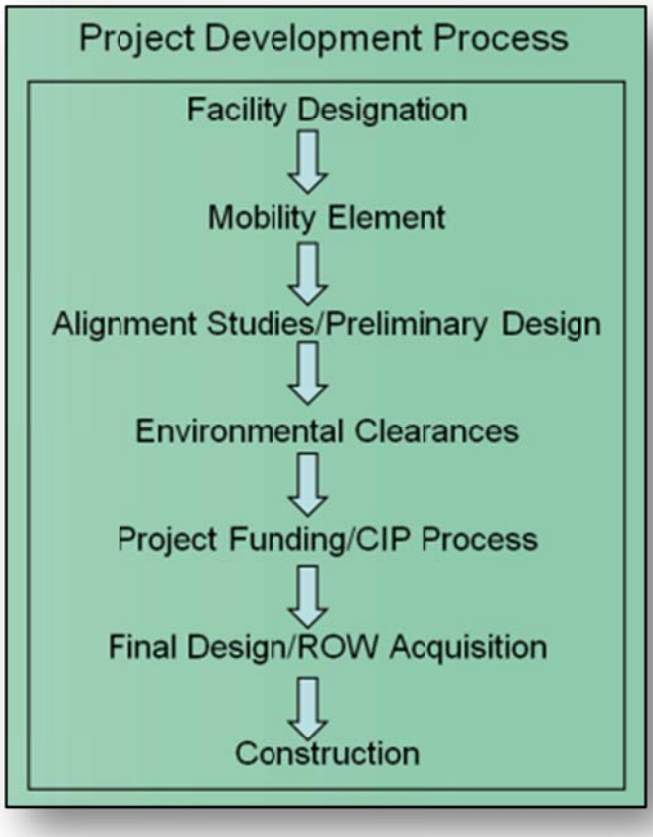
FEHR PEERS

FIGURE 8-2
VALLEY CENTER - PRIMARY & SECONDARY CORRIDOR PRIORITIES
County of San Diego Community Evacuation Route Study

8.2 Implementation and Funding

The purpose of this study was to identify a community evacuation network plan; however, this plan should not give the expectation that the County will assume the responsibility for funding the roads identified. External funding sources would need to be considered to pursue construction of the evacuation routes identified in this study. If implementation of one of more of the community evacuation routes were to be pursued, a number of steps would need to occur as detailed below.

Once added to the Mobility Element, right-of-way can be reserved in association with future growth in a manner similar to a Mobility Element roadway. Subsequent steps of the project development process include refinement of the roadway alignment/preliminary design, conduct of the appropriate level of environmental clearance, followed by project funding and final design/acquisition of right-of-way. Depending on funding available and local priorities, the project development process leading up to construction can take anywhere between three to five year to complete.



The primary external funding options to construct the community evacuation routes include:

Future Development – The County Subdivision Ordinance requires both major and minor subdivisions to offer both on-site and off-site roads for dedication or obtain offers for dedication, where applicable to the requirements of the Ordinance. Depending on individual circumstances, discretionary development projects are required to either construct or to agree to irrevocable offers of dedication for roads and bicycle facilities identified in the Mobility Element of the General Plan. Amending the Mobility Element and/or applicable community plan to also include community evacuation routes would require future development to dedicate or obtain offers for dedication in a manner similar to a Mobility Element roadway. County regulation provide for public dedication/extraction of right-of-way and potential construction of new roadways consistent with the needs of future growth and development.

State and Federal Grants – A number of grant programs maybe available under the auspices of the United States Department of Transportation and/or Caltrans specifically focused on enhancement public safety.

Assessment Districts – Includes the designation of geographic area (district) and parcel assessments to fund a specified improvement or set of improvements. Must be premised upon the need for the improvements and proportional to the benefit provided.

Appendix A
Tier 1 Evaluation Worksheets

VALLEY CENTER

Initial CERS Corridor Feasibility Screening

#	Corridor	Engineering Feasibility		Implementation Constraints		Significant Environment Effects		General Plan Compatibility		Notes	Composite Score
1	West Lilac Road & Mirar De Valle	Challenging grades south of Old Castle	0	Significant potential for ROW issues	0	Few identified constraints / wetlands	0	Previous considerations of Betsworth to N. Broadway alignment	+	• Modify central portion of corridor between Betsworth and Old Castle to avoid significant grades - more easterly alignment	+1
2	Lilac Road & Cole Grade Road	Limited topographic constraints	+	Tribal lands	0	Few identified constraints	+	Potential bike route / Previous considerations	+	•Existing McNally Road, private discontinuous roadway •Tribal land impacts	+3
3	West Lilac Road & Cole Grade Road	Limited topographic constraints - areas of 10%+	+	New alignment / ROW requirements	0	Wetlands	0	Road 3A in General Plan Update	++		+3
4	West Oak Glen Road & Hilldale Road	Few challenges	++	ROW issues	+	Developed area	++	Not previously considered	0	•Existing Stardust Lane - private Roadway	+5
5	Mountain Meadow Road & Corridor #6	Significant topographic challenges	-	ROW requirements / Costs	-	Wetlands / drainage areas	0	Not previously considered	0		-2
6	Lilac Road & Cole Grade Road	Significant topographic challenges	-	Water District ROW	0	Few identified constraints	+	Not previously considered	0		0
7	Betsworth Road & Mirar De Valle	Few challenges	++	Potential ROW issues	+	Few identified constraints	+	Not previously considered	0	•Existing Country Club Lane - unpaved / private	+4
8	Mountain Meadow Road & Valley Center Road	Few challenges	++	ROW issues	+	Few identified constraints	+	Proposed Community Collector	++		+6
9	Valley Center Road & Cole Grade Road	Significat topographic constraints	-	ROW issues	0	Developed area	+	Not previously considered	0		0

More Positive ++ + 0 - -- More Negative

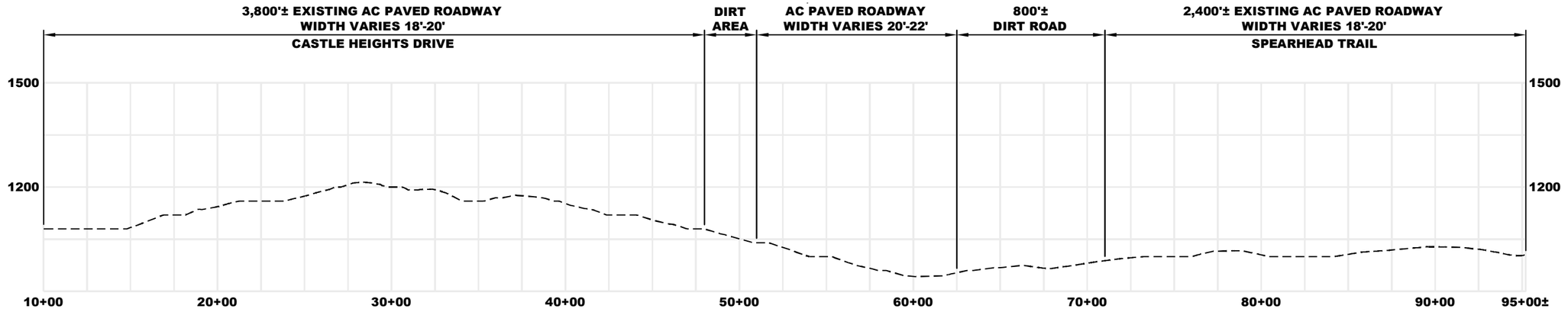
VALLEY CENTER

Initial CERS Corridor Feasibility Screening

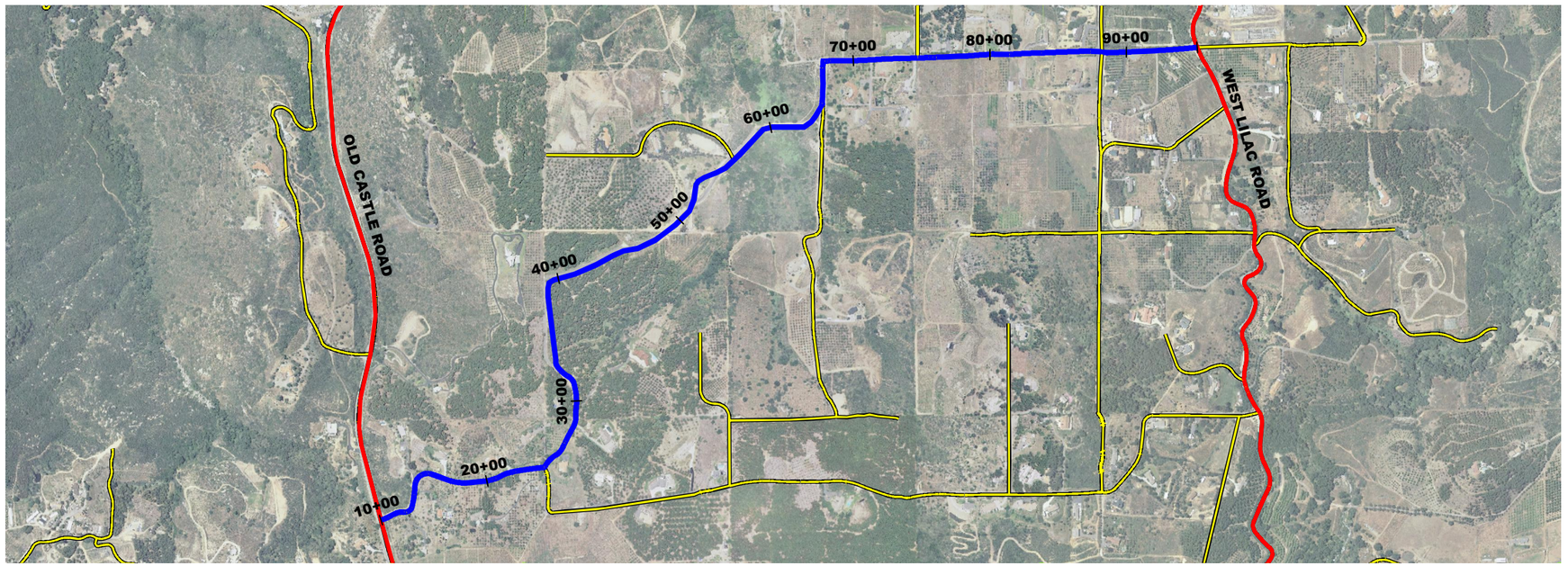
#	Corridor	Engineering Feasibility		Implementation Constraints		Significant Environment Effects		General Plan Compatibility		Notes	Composite Score
10	Cole Grade Road & SR-76	Significant topography along eastern segment	-	ROW / Cost requirements	-	Potential for significant effects	0	Not previously considered	0	•Connection to SR-76 would be desirable	-2
11	Pauma Heights Road & Vesper Road	Few constraints	+	Private ROW north of Cool Valley	+	Developed area	++	•Cool Valley to Miller Rd in GPU as a Collector •Previously considered - north of Cool Valley along Saddleback to Pauma Heights Rd	++		+6
12	Valley Center Road & Woods Valley Road	No topographic challenges	++	ROW issues	+	Few identified effects	+	Not previously considered	0	•Cool Water Ranch Lane - existing private road	+4
13	North Lake Wohlford Road & Los Hermanos Ranch Road	No topographic challenges	++	Tribal lands / ROW issues	--	Few identified effects	+	Not previously considered	0	•Existing N. Canal Road - Private Road	+1
14	Paradise Mountain Road & Guejito Road	Significant topographic contraints	-	Potential for significant costs due to topography	0	Few identified effects	+	In previous GP as Circulation Element / Collector roadway	+	•Discontinuous / switchbacks on existing unimproved roadway	+1

More Positive ++ + 0 - -- More Negative

Appendix B
Alignment Plan/Profiles



PROFILE:
HORIZONTAL: 1"=200'
VERTICAL: 1"=100'



300 0 300 600
SCALE: 1"=300'

EXISTING MINOR ROAD
EXISTING MAJOR ROAD
PROPOSED RURAL COLLECTOR

PLAN:
SCALE: 1"=300'

CORRIDOR
1A

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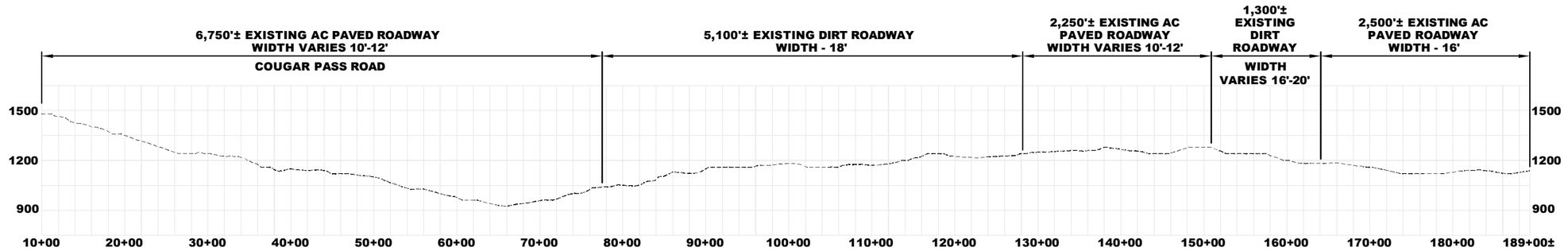
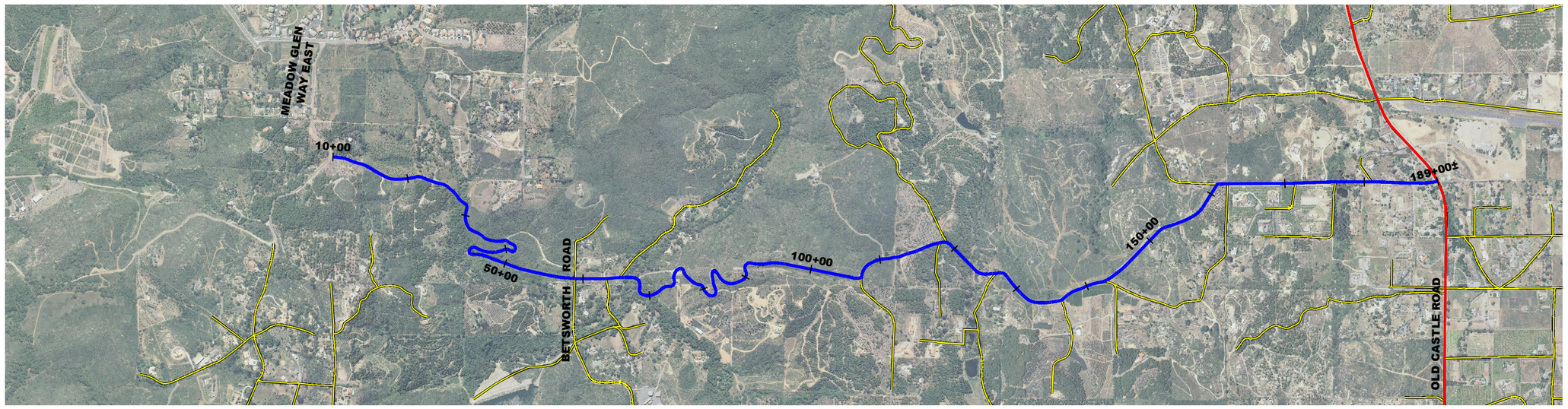
COUNTY OF SAN DIEGO - VALLEY CENTER TIER 2 COMMUNITY EVACUATION ROUTE STUDY

WEST LILAC ROAD TO OLD CASTLE ROAD

ORIGINAL SCALE IN INCHES



PROFILE:
HORIZONTAL: 1"=400'
VERTICAL: 1"=200'



EXISTING MINOR ROAD
EXISTING MAJOR ROAD
PROPOSED RURAL COLLECTOR

PLAN:
SCALE: 1"=400'

CORRIDOR
1B

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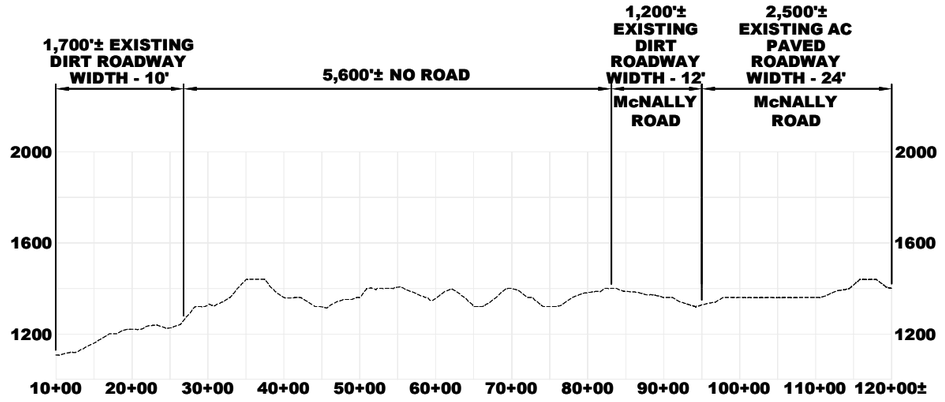
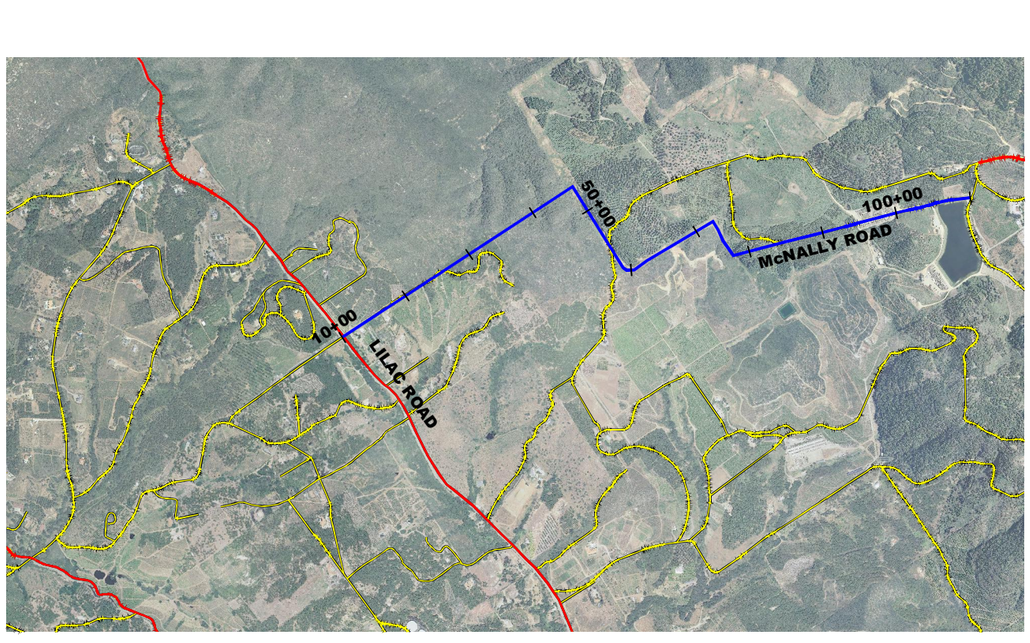
COUNTY OF SAN DIEGO - VALLEY CENTER TIER 2
COMMUNITY EVACUATION ROUTE STUDY

MEADOW GLEN WAY EAST to OLD CASTLE ROAD



PROFILE:
HORIZONTAL: 1"=600'
VERTICAL: 1"=200'



600 0 600 1200
SCALE: 1"=600'

EXISTING MINOR ROAD
EXISTING MAJOR ROAD
PROPOSED RURAL COLLECTOR

PLAN:
SCALE: 1"=600'

CORRIDOR
2

PLAN: AECOM
SCALE: 1"=600'
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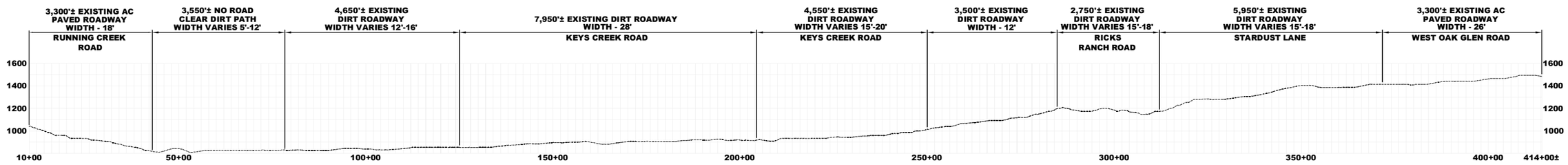
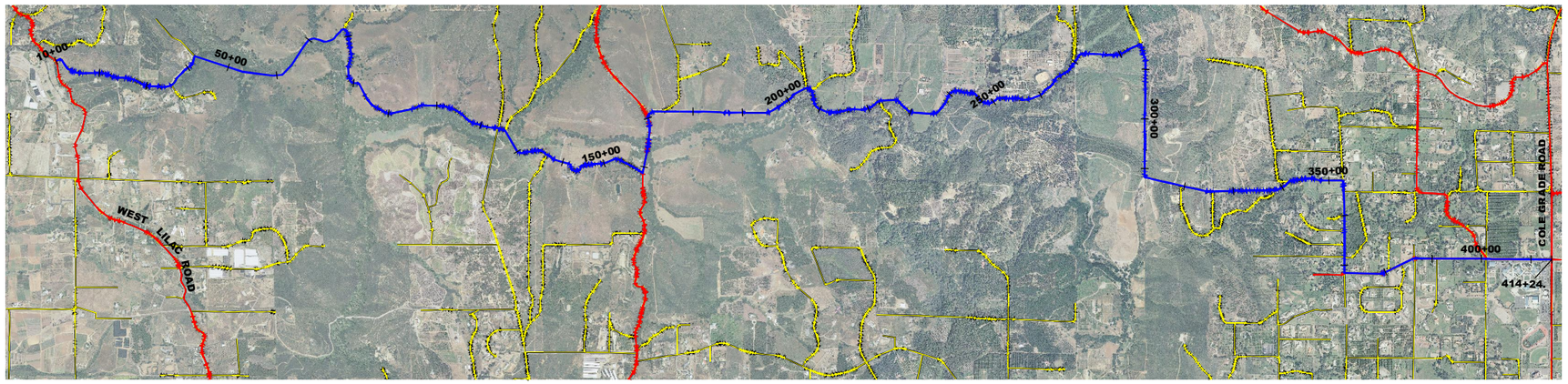
COUNTY OF SAN DIEGO - VALLEY CENTER TIER 2 COMMUNITY EVACUATION ROUTE STUDY

LIILAC ROAD TO McNALLY ROAD

ORIGINAL SCALE IN INCHES



PROFILE:
HORIZONTAL: 1"=600'
VERTICAL: 1"=200'



600 0 600 1200
SCALE: 1"=600'

EXISTING MINOR ROAD
EXISTING MAJOR ROAD
PROPOSED RURAL COLLECTOR

PLAN:
SCALE: 1"=600'

CORRIDOR
3

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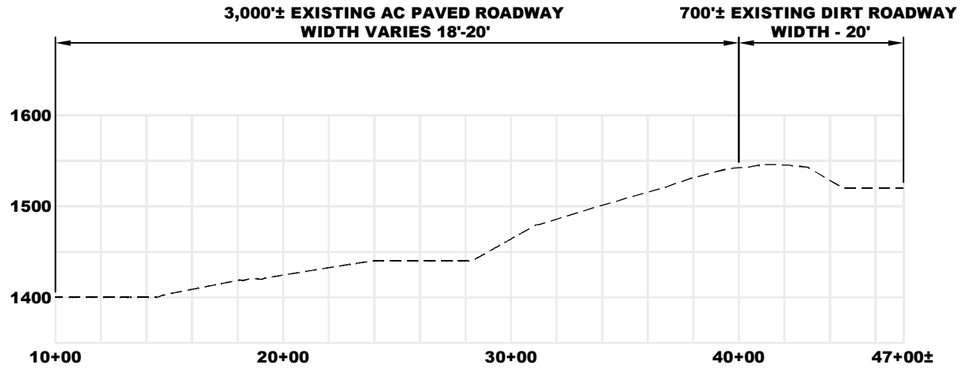
COUNTY OF SAN DIEGO - VALLEY CENTER TIER 2 COMMUNITY EVACUATION ROUTE STUDY

WEST LILAC ROAD TO COLE GRADE ROAD



PROFILE:
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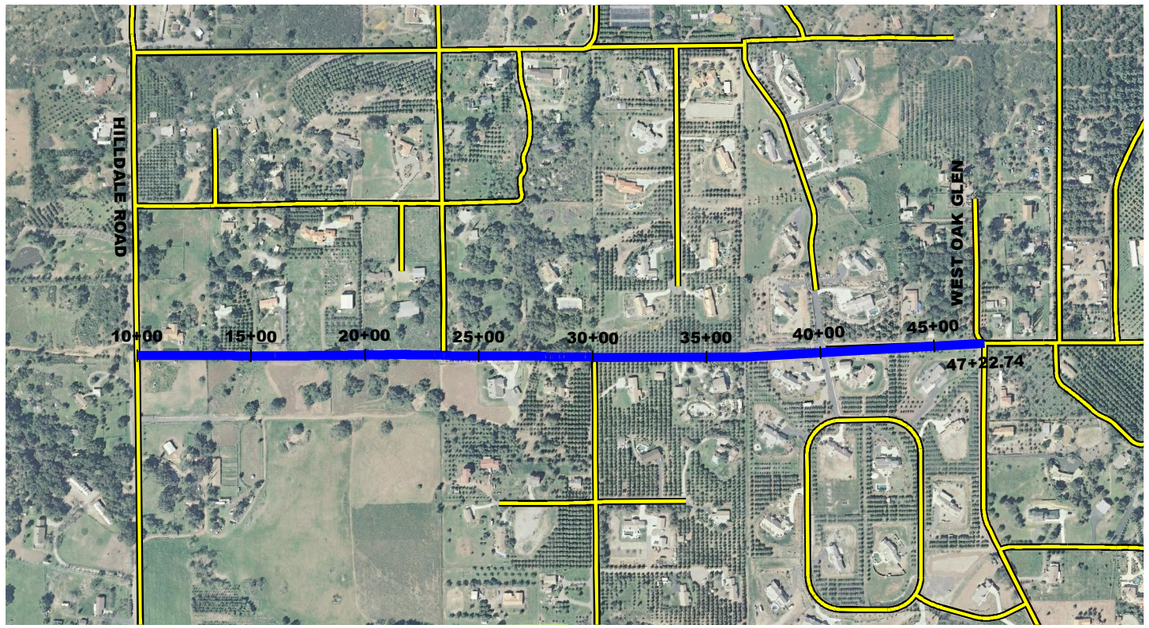
VERTICAL: 1"=50'



200 0 200 400
SCALE: 1"=200'

EXISTING MINOR ROAD
EXISTING MAJOR ROAD
PROPOSED RURAL COLLECTOR

PLAN:
SCALE: 1"=200'

CORRIDOR
4

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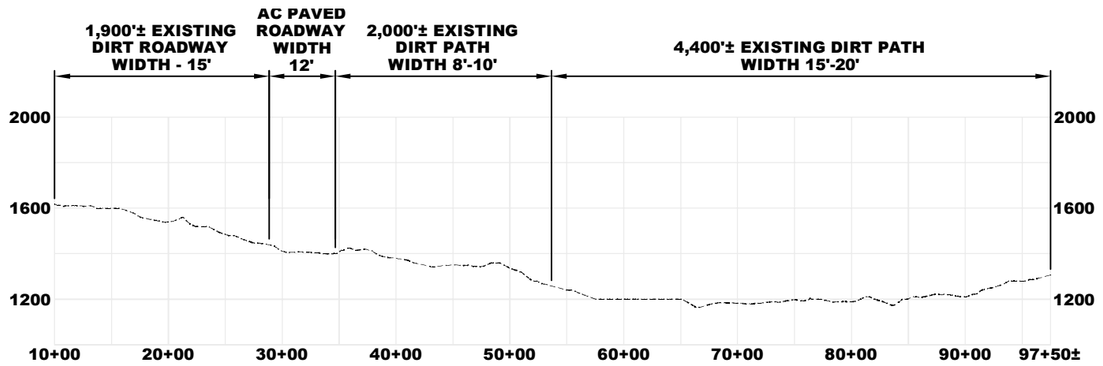
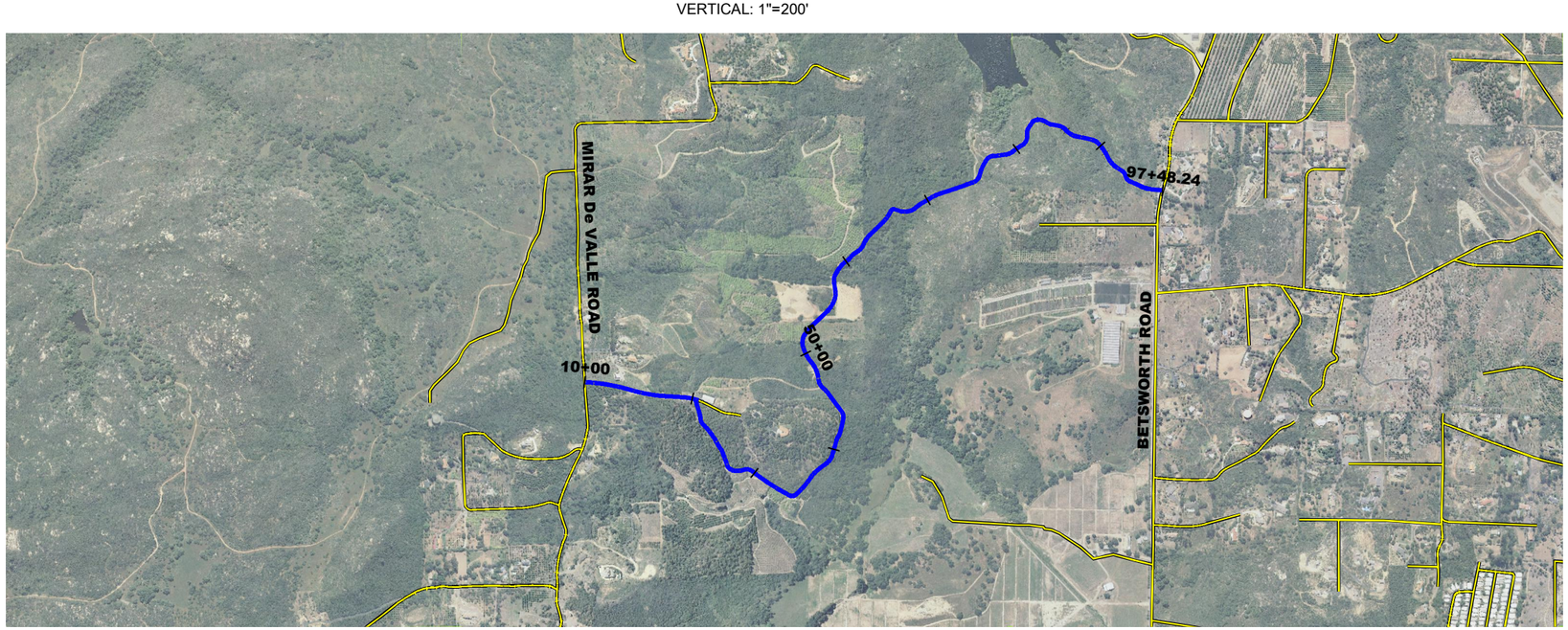
COUNTY OF SAN DIEGO - VALLEY CENTER TIER 2 COMMUNITY EVACUATION ROUTE STUDY

HILLDALE ROAD TO WEST OAK GLEN ROAD

ORIGINAL SCALE IN INCHES



PROFILE:
HORIZONTAL: 1"=400'
VERTICAL: 1"=200'



400 0 400 800
SCALE: 1"=400'

EXISTING MINOR ROAD
EXISTING MAJOR ROAD
PROPOSED RURAL COLLECTOR

PLAN:
SCALE: 1"=400'

CORRIDOR
7

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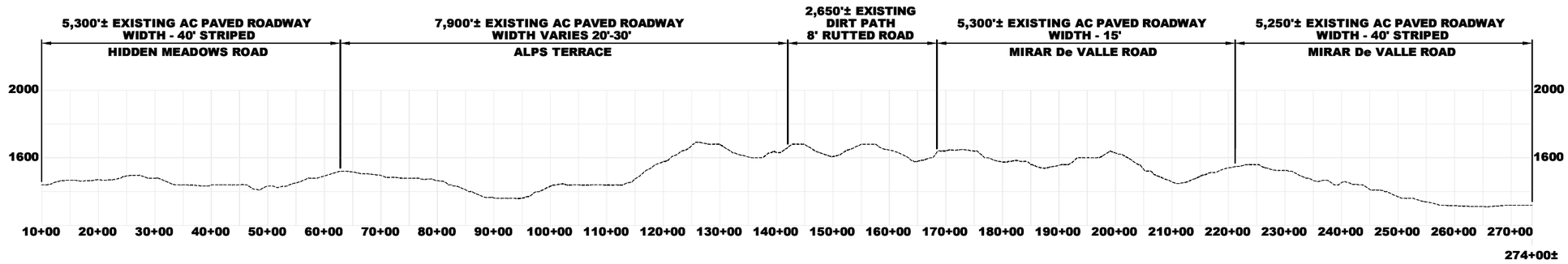
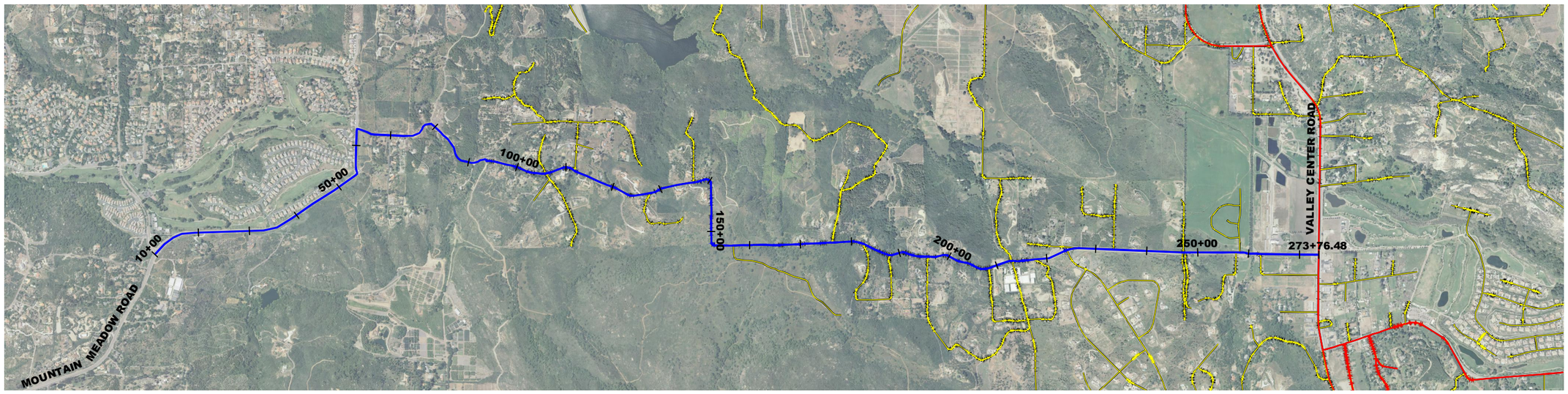
COUNTY OF SAN DIEGO - VALLEY CENTER TIER 2 COMMUNITY EVACUATION ROUTE STUDY

MIRAR De VALLE ROAD TO BETSWORTH ROAD

ORIGINAL SCALE IN INCHES



PROFILE:
HORIZONTAL: 1"=600'
VERTICAL: 1"=200'



EXISTING MINOR ROAD
EXISTING MAJOR ROAD
PROPOSED RURAL COLLECTOR

PLAN:
SCALE: 1"=600'

CORRIDOR
8

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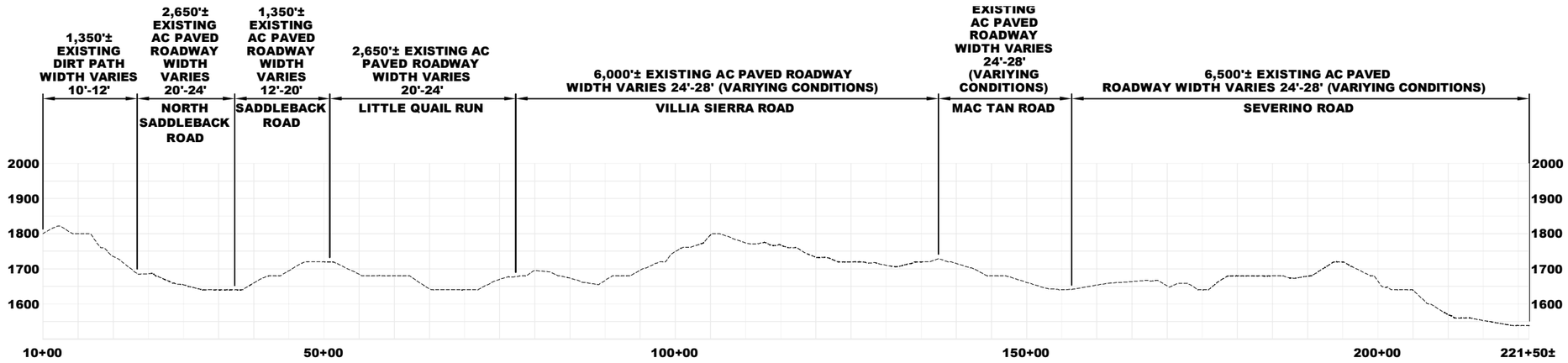
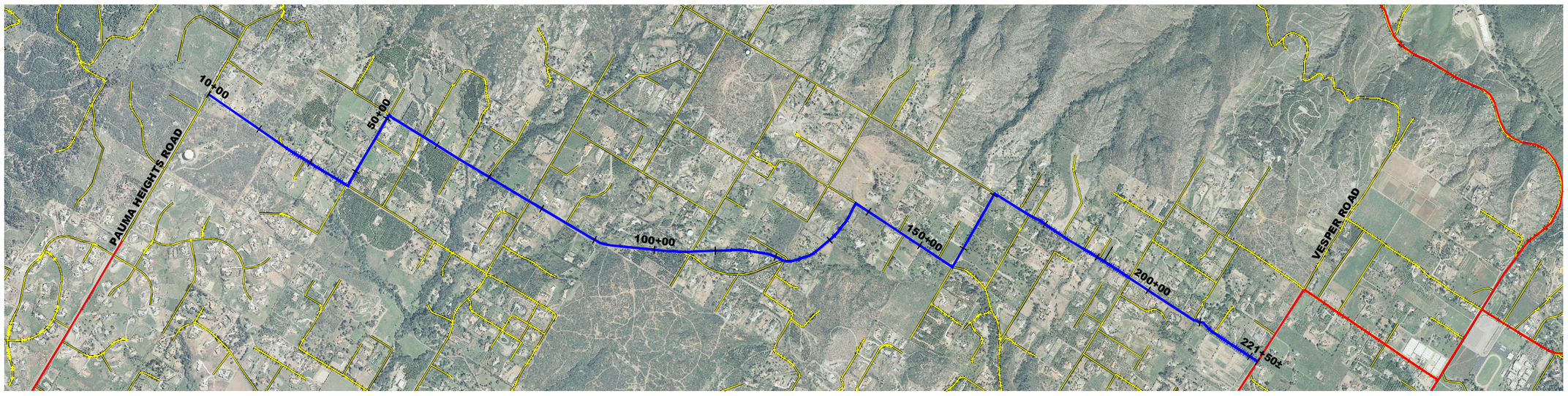
COUNTY OF SAN DIEGO - VALLEY CENTER TIER 2 COMMUNITY EVACUATION ROUTE STUDY

MOUNTAIN MEADOW ROAD TO VALLEY CENTER ROAD

ORIGINAL SCALE IN INCHES 0 1 2 3



PROFILE:
HORIZONTAL: 1"=500'
VERTICAL: 1"=100'



EXISTING MINOR ROAD
EXISTING MAJOR ROAD
PROPOSED RURAL COLLECTOR

PLAN:
SCALE: 1"=500'

CORRIDOR
11

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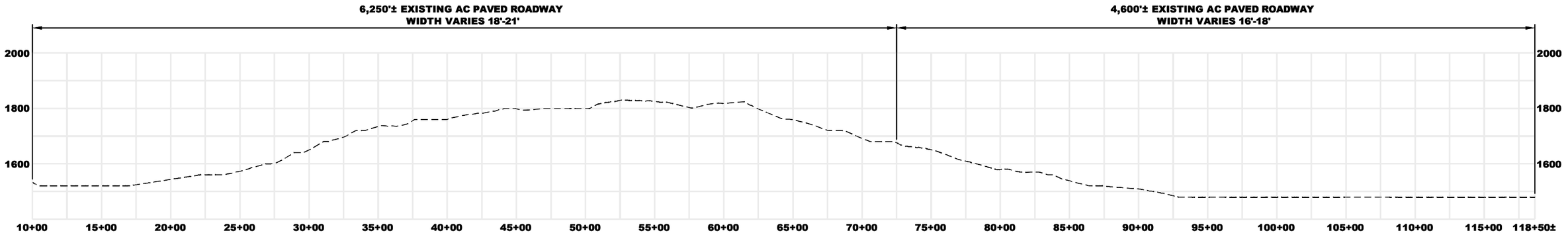
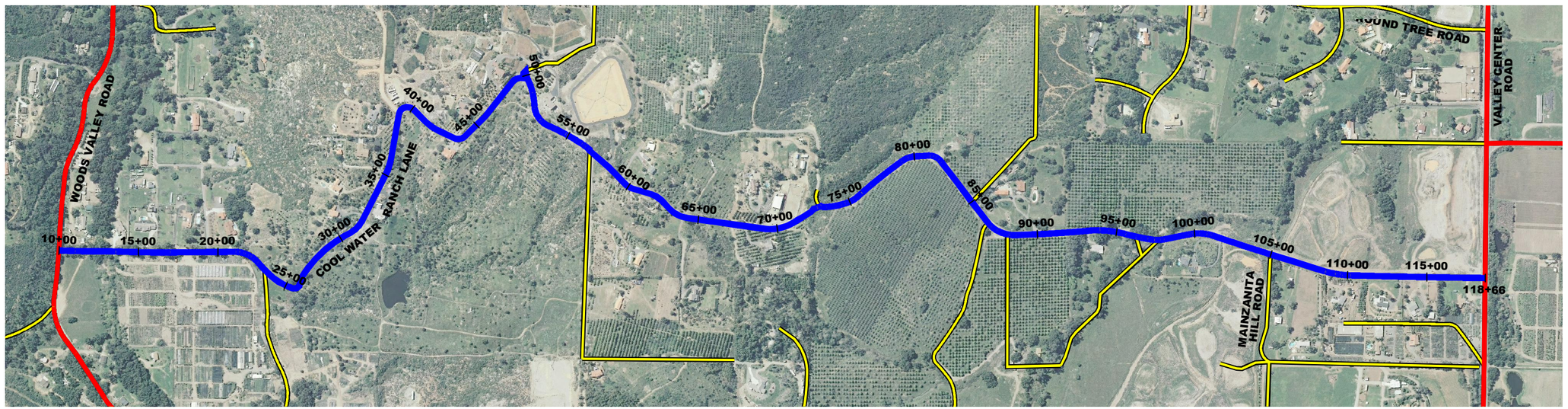
COUNTY OF SAN DIEGO - VALLEY CENTER TIER 2 COMMUNITY EVACUATION ROUTE STUDY

PAUMA HEIGHTS ROAD TO VESPER ROAD

ORIGINAL SCALE IN INCHES



PROFILE:
HORIZONTAL: 1"=200'
VERTICAL: 1"=100'



200 0 200 400
SCALE: 1"=200'

EXISTING MINOR ROAD
EXISTING MAJOR ROAD
PROPOSED RURAL COLLECTOR

PLAN:
SCALE: 1"=200'

CORRIDOR
12

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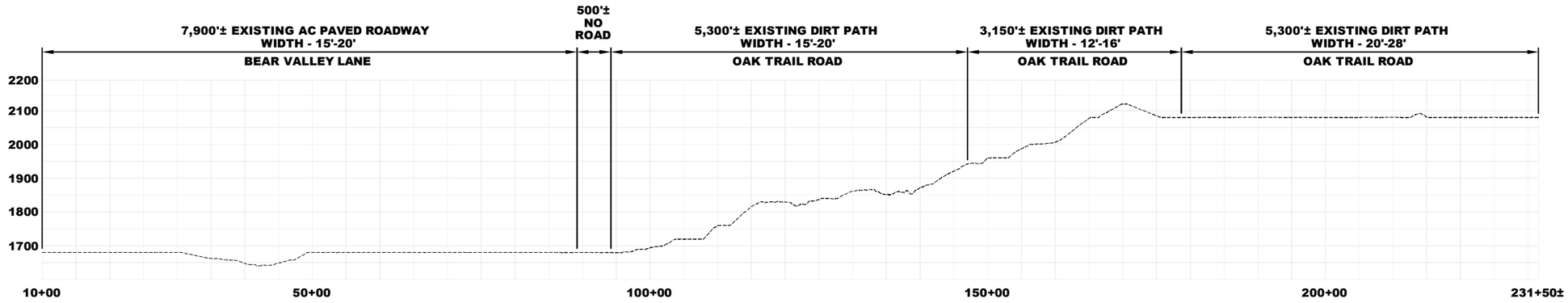
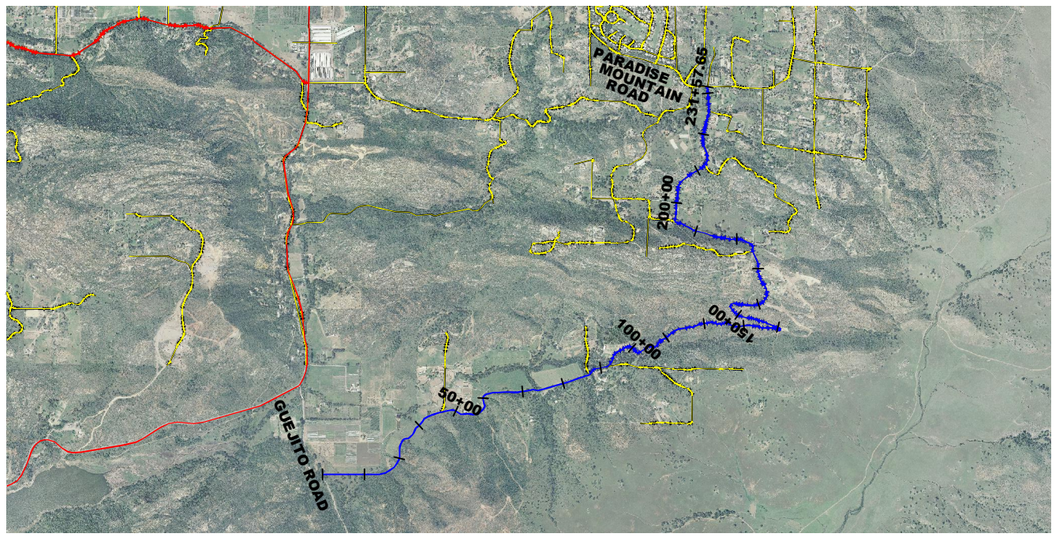
COUNTY OF SAN DIEGO - VALLEY CENTER TIER 2 COMMUNITY EVACUATION ROUTE STUDY

VALLEY CENTER ROAD TO WOODS VALLEY ROAD

ORIGINAL SCALE IN INCHES 0 1 2 3



PROFILE:
HORIZONTAL: 1"=500'
VERTICAL: 1"=100'



1000 0 1000 2000
SCALE: 1"=1000'

EXISTING MINOR ROAD
EXISTING MAJOR ROAD
PROPOSED RURAL COLLECTOR

PLAN:
SCALE: 1"=1000'

CORRIDOR
14

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COUNTY OF SAN DIEGO - VALLEY CENTER TIER 2 COMMUNITY EVACUATION ROUTE STUDY

GUEJITO ROAD TO PARADISE MOUNTAIN ROAD

ORIGINAL SCALE IN INCHES 0 1 2 3 4

Appendix C
Evacuation Route Corridor Construction Cost Estimates

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May 9, 2011

VALLEY CENTER COMMUNITY EVACUATION ROUTE STUDY STUDY
PRELIMINARY ENGINEER'S CONSTRUCTION ESTIMATE

CORRIDOR 1A	WEST LILAC RD TO OLD CASTLE RD			
DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT PRICE**	**TOTAL**
Clearing, Grubbing & Mobilization	1	LS	$96,495	$96,495
Earthwork (average of 2' cut/fill)	7000	CY	$25	$175,000
Paving & Base (28' wide)	102000	SF	$5	$510,000
Striping & Signage	8500	LF	$0.50	$4,250
Environmental Mitigation (placeholder)	1	LS	$172,313	$172,313
Micellaneous (Utilities, Add'l Cut, Add'l Clearing, etc.)	1	LS	$103,388	$103,388
			SUBTOTAL	$1,061,445
			30% CONTINGENCY	$318,434
			ESTIMATED TOTAL	**$1,400,000**

CORRIDOR 1B	MEADOW GLEN WAY EAST TO OLD CASTLE RD			
DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT PRICE**	**TOTAL**
Clearing, Grubbing & Mobilization	1	LS	$330,953	$330,953
Earthwork (average of 2' cut/fill)	20000	CY	$25	$500,000
Paving & Base (28' wide)	371000	SF	$5	$1,855,000
Striping & Signage	17900	LF	$0.50	$8,950
Environmental Mitigation (placeholder)	1	LS	$590,988	$590,988
Micellaneous (Utilities, Add'l Cut, Add'l Clearing, etc.)	1	LS	$354,593	$354,593
			SUBTOTAL	$3,640,483
			30% CONTINGENCY	$1,092,145
			ESTIMATED TOTAL	**$4,700,000**

CORRIDOR 2	LILAC RD TO MCNALLY RD			
DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT PRICE**	**TOTAL**
Clearing, Grubbing & Mobilization	1	LS	$237,370	$237,370
Earthwork (average of 2' cut/fill)	18000	CY	$25	$450,000
Paving & Base (28' wide)	248000	SF	$5	$1,240,000
Striping & Signage	11000	LF	$0.50	$5,500
Environmental Mitigation (placeholder)	1	LS	$423,875	$423,875
Micellaneous (Utilities, Add'l Cut, Add'l Clearing, etc.)	1	LS	$254,325	$254,325
			SUBTOTAL	$2,611,070
			30% CONTINGENCY	$783,321
			ESTIMATED TOTAL	**$3,400,000**

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May 9, 2011

VALLEY CENTER COMMUNITY EVACUATION ROUTE STUDY STUDY
PRELIMINARY ENGINEER'S CONSTRUCTION ESTIMATE

CORRIDOR 3	WEST LILAC RD TO COLE GRADE RD			
DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT PRICE**	**TOTAL**
Clearing, Grubbing & Mobilization	1	LS	$774,928	$774,928
Earthwork (average of 2' cut/fill)	32000	CY	$25	$800,000
Paving & Base (28' wide)	943000	SF	$5	$4,715,000
Striping & Signage	40400	LF	$0.50	$20,200
Environmental Mitigation (placeholder)	1	LS	$1,383,800	$1,383,800
Micellaneous (Utilities, Add'l Cut, Add'l Clearing, etc.)	1	LS	$830,280	$830,280
			SUBTOTAL	$8,524,208
			30% CONTINGENCY	$2,557,262
			ESTIMATED TOTAL	**$11,100,000**

CORRIDOR 4	HILLDALE RD TO WEST OAK GLEN RD			
DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT PRICE**	**TOTAL**
Clearing, Grubbing & Mobilization	1	LS	$44,359	$44,359
Earthwork (average of 2' cut/fill)	2600	CY	$25	$65,000
Paving & Base (28' wide)	50000	SF	$5	$250,000
Striping & Signage	3700	LF	$0.50	$1,850
Environmental Mitigation (placeholder)	1	LS	$79,213	$79,213
Micellaneous (Utilities, Add'l Cut, Add'l Clearing, etc.)	1	LS	$47,528	$47,528
			SUBTOTAL	$487,949
			30% CONTINGENCY	$146,385
			ESTIMATED TOTAL	**$600,000**

CORRIDOR 7	MIRAR DE VALLE RD TO BETSWORTH RD			
DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT PRICE**	**TOTAL**
Clearing, Grubbing & Mobilization	1	LS	$202,916	$202,916
Earthwork (average of 2' cut/fill)	9800	CY	$25	$245,000
Paving & Base (28' wide)	240000	SF	$5	$1,200,000
Striping & Signage	8800	LF	$0.50	$4,400
Environmental Mitigation (placeholder)	1	LS	$362,350	$362,350
Micellaneous (Utilities, Add'l Cut, Add'l Clearing, etc.)	1	LS	$217,410	$217,410
			SUBTOTAL	$2,232,076
			30% CONTINGENCY	$669,623
			ESTIMATED TOTAL	**$2,900,000**

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May 9, 2011

VALLEY CENTER COMMUNITY EVACUATION ROUTE STUDY STUDY
PRELIMINARY ENGINEER'S CONSTRUCTION ESTIMATE

CORRIDOR 8	MOUNTAIN MEADOW RD TO VALLEY CENTER RD			
DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT PRICE**	**TOTAL**
Clearing, Grubbing & Mobilization	1	LS	$193,998	$193,998
Earthwork (average of 2' cut/fill)	13700	CY	$25	$342,500
Paving & Base (28' wide)	206000	SF	$5	$1,030,000
Striping & Signage	26400	LF	$0.50	$13,200
Environmental Mitigation (placeholder)	1	LS	$346,425	$346,425
Micellaneous (Utilities, Add'l Cut, Add'l Clearing, etc.)	1	LS	$207,855	$207,855
			SUBTOTAL	$2,133,978
			30% CONTINGENCY	$640,193
			ESTIMATED TOTAL	**$2,800,000**

CORRIDOR 11	MOTHER GRUNDY TRUCK TRAIL TO SR-94			
DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT PRICE**	**TOTAL**
Clearing, Grubbing & Mobilization	1	LS	$607,355	$607,355
Earthwork (average of 2' cut/fill)	31000	CY	$25	$775,000
Paving & Base (28' wide)	710000	SF	$5	$3,550,000
Striping & Signage	26500	LF	$0.50	$13,250
Environmental Mitigation (placeholder)	1	LS	$1,084,563	$1,084,563
Micellaneous (Utilities, Add'l Cut, Add'l Clearing, etc.)	1	LS	$650,738	$650,738
			SUBTOTAL	$6,680,905
			30% CONTINGENCY	$2,004,272
			ESTIMATED TOTAL	**$8,700,000**

CORRIDOR 11	PAUMA HEIGHTS RD TO VESPER RD			
DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT PRICE**	**TOTAL**
Clearing, Grubbing & Mobilization	1	LS	$151,984	$151,984
Earthwork (average of 2' cut/fill)	11000	CY	$25	$275,000
Paving & Base (28' wide)	160000	SF	$5	$800,000
Striping & Signage	21200	LF	$0.50	$10,600
Environmental Mitigation (placeholder)	1	LS	$271,400	$271,400
Micellaneous (Utilities, Add'l Cut, Add'l Clearing, etc.)	1	LS	$162,840	$162,840
			SUBTOTAL	$1,671,824
			30% CONTINGENCY	$501,547
			ESTIMATED TOTAL	**$2,200,000**

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May 9, 2011

VALLEY CENTER COMMUNITY EVACUATION ROUTE STUDY STUDY
PRELIMINARY ENGINEER'S CONSTRUCTION ESTIMATE

CORRIDOR 12	VALLEY CENTER RD TO WOODS VALLEY RD			
DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT PRICE**	**TOTAL**
Clearing, Grubbing & Mobilization	1	LS	$113,813	$113,813
Earthwork (average of 2' cut/fill)	8700	CY	$25	$217,500
Paving & Base (28' wide)	118000	SF	$5	$590,000
Striping & Signage	10900	LF	$0.50	$5,450
Environmental Mitigation (placeholder)	1	LS	$203,238	$203,238
Micellaneous (Utilities, Add'l Cut, Add'l Clearing, etc.)	1	LS	$121,943	$121,943
			SUBTOTAL	$1,251,943
			30% CONTINGENCY	$375,583
			ESTIMATED TOTAL	**$1,600,000**

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May 9, 2011

VALLEY CENTER COMMUNITY EVACUATION ROUTE STUDY STUDY
PRELIMINARY ENGINEER'S CONSTRUCTION ESTIMATE

CORRIDOR 14	GUEJITO RD TO PARADISE MOUNTAIN RD			
DESCRIPTION	**QUANTITY**	**UNIT**	**UNIT PRICE**	**TOTAL**
Clearing, Grubbing & Mobilization	1	LS	$425,054	$425,054
Earthwork (average of 2' cut/fill)	21000	CY	$25	$525,000
Paving & Base (28' wide)	500000	SF	$5	$2,500,000
Striping & Signage	22200	LF	$0.50	$11,100
Environmental Mitigation (placeholder)	1	LS	$759,025	$759,025
Micellaneous (Utilities, Add'l Cut, Add'l Clearing, etc.)	1	LS	$455,415	$455,415
			SUBTOTAL	$4,675,594
			30% CONTINGENCY	$1,402,678
			ESTIMATED TOTAL	**$6,100,000**