

---

## **IX. APPENDICES**

---

# **APPENDIX A**

Council Policy 600-40 Analysis

## *List of Figures*

|            |                                    |      |
|------------|------------------------------------|------|
| Figure A.1 | Development Suitability .....      | A-2  |
| Figure A.2 | MHPA Boundary .....                | A-4  |
| Figure A.3 | Slope Analysis .....               | A-6  |
| Figure A.4 | Biology .....                      | A-8  |
| Figure A.5 | Floodplains .....                  | A-10 |
| Figure A.6 | Geology .....                      | A-12 |
| Figure A.7 | Ownership Patterns .....           | A-14 |
| Figure A.8 | Composite of Sensitive Lands ..... | A-16 |

## *List of Tables*

|           |                    |      |
|-----------|--------------------|------|
| Table A.1 | RPO Analysis ..... | A-18 |
|-----------|--------------------|------|

# APPENDIX A. COUNCIL POLICY 600-40 ANALYSIS

---

## I. DEVELOPMENT SUITABILITY ANALYSIS

The planning of Subarea I began with the preparation of a detailed inventory of sensitive lands (see **Figures A.3 - A.7**). The inventory was rigorously compiled in the field and later digitized for the City's use in mapping an Environmental Tier as part of the 1992 Framework Planning Process for the North City Future Urbanizing Areas. While most of the property has been disturbed by past agricultural use—a use no longer economically viable—many important biological and landform resources remain. This section describes the major opportunities and constraints that were used to identify the portions of Subarea I that are most suitable for development.

### A. OPPORTUNITIES

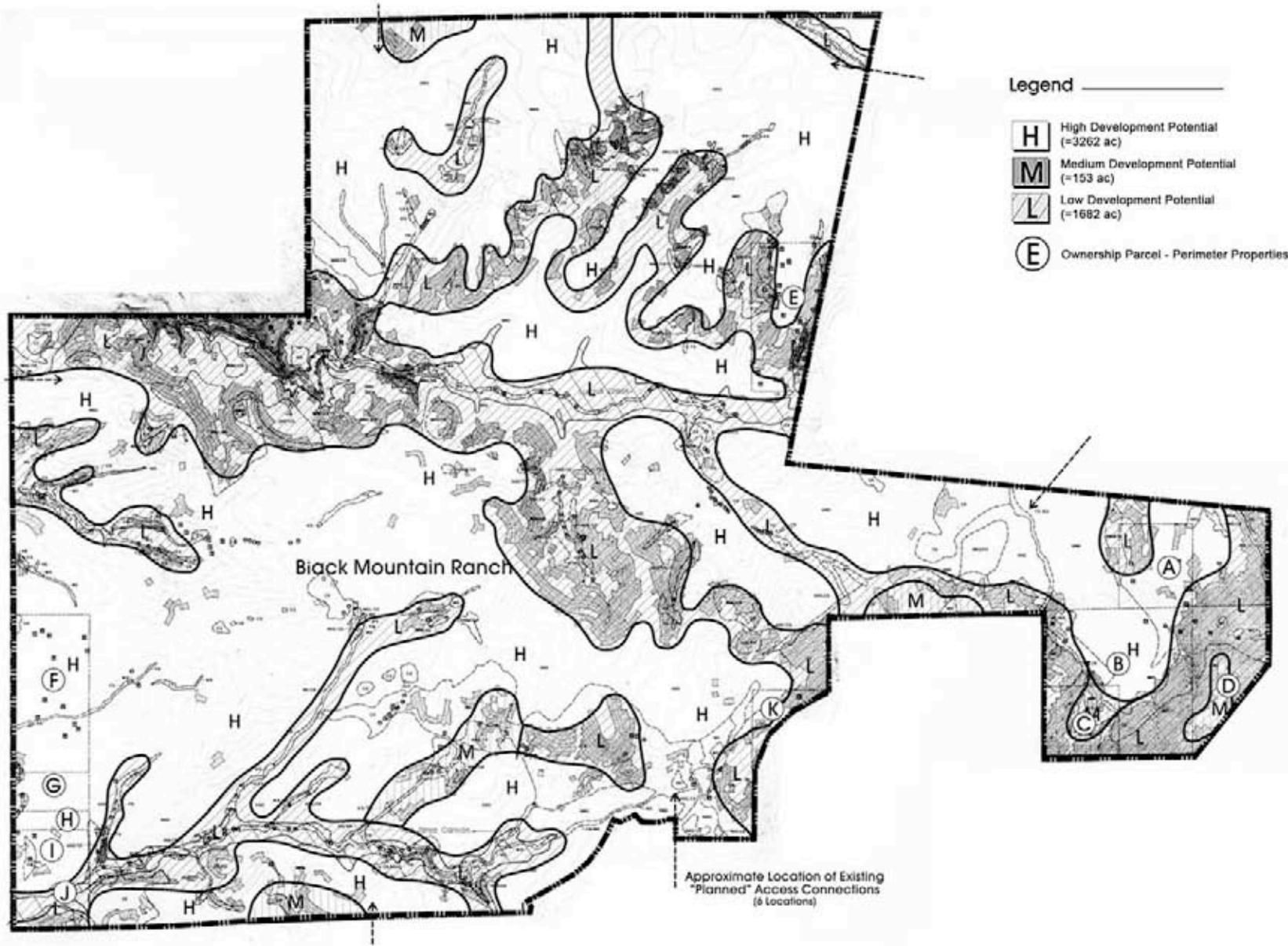
#### 1. Opportunity to create an open space system to preserve ecological and scenic resources

The MHPA is organized into a system of open space units and major linkages creating an interconnected system throughout Subarea I that forms the connections to the Peñasquitos Canyon preserve to the south and the proposed San Dieguito River Valley Regional Open Space Park to the north. These areas are necessary for habitat preservation, the maintenance of biodiversity and healthy functioning of ecosystem and landscape processes. Portions of all of these areas are expected to become part of the final open space designation for Subarea I. While there is some flexibility in designing the open space system, the primary objective to preserve these areas should be considered fixed unless subsequent technical information indicates that its boundaries should be altered.

Upon final location and setting of the open space system, and the addition of areas intended to function as visual and active recreational open space, open space lands should be further partitioned into several “zones” that clearly delineate the difference between areas for habitat conservation and other uses. Monitoring, protection and management of these areas must be ongoing to guarantee that system components continue functioning and to confirm that species needs are met.

#### 2. Opportunity to establish a compact development pattern in Subarea I

Development within Subarea I may take several forms and densities, depending on its location in relation to the natural base, neighboring communities, transportation routes and considerations relating to urban form and market acceptance. This constitutes a “multi-patterned” land use concept and provides a range of development models from very low-density residential to relatively compact, dense “villages” at carefully selected locations in the landscape.



**Council Policy 600-40 Analysis/Development Suitability Analysis - 5,097 Acres**  
**Black Mountain Ranch Subarea Plan**

**A.1**  
**FIGURE**

The vision for Subarea I of multi-patterned land use emphasizes the key goals of preserving the character of the natural landscapes while creating neighborhoods with a “diversity of character, sense of community and range of affordability.” The principle of focusing compact development in carefully selected and defined areas within Subarea I offers potential to realize the goals of preserving large areas of the natural landscape, creating a regionally significant open space system and developing a multi-patterned land use that is financially and fiscally viable. With this approach, a number of potential development areas can be located and general planning and design principles identified to shape the land use program, development pattern and design character of each area. The objective would be to create distinct neighborhoods clearly defined by the natural features and the open space system, with the open spaces providing the natural breaks in the development pattern. Using this approach, sites would not interrupt the planned regional open space linkages, and they would be located outside the areas of the Environmental Tier causing minimum disturbance to natural features and habitat. These sites would be of sufficient size to support a viable residential neighborhood with at least a small core containing commercial and community services. The sites would also be near employment locations and located adjacent to major thoroughfares with direct links to the I-15 and I-5 corridors, where regional transit is provided.

Given the above criteria, a preliminary analysis of Subarea I was made to identify potential sites for development. These are shown on **Figure A.1**. There are several locations where compact neighborhoods could be focused with minimum disruption of biological resources and direct links to transit.

## **B. CONSTRAINTS**

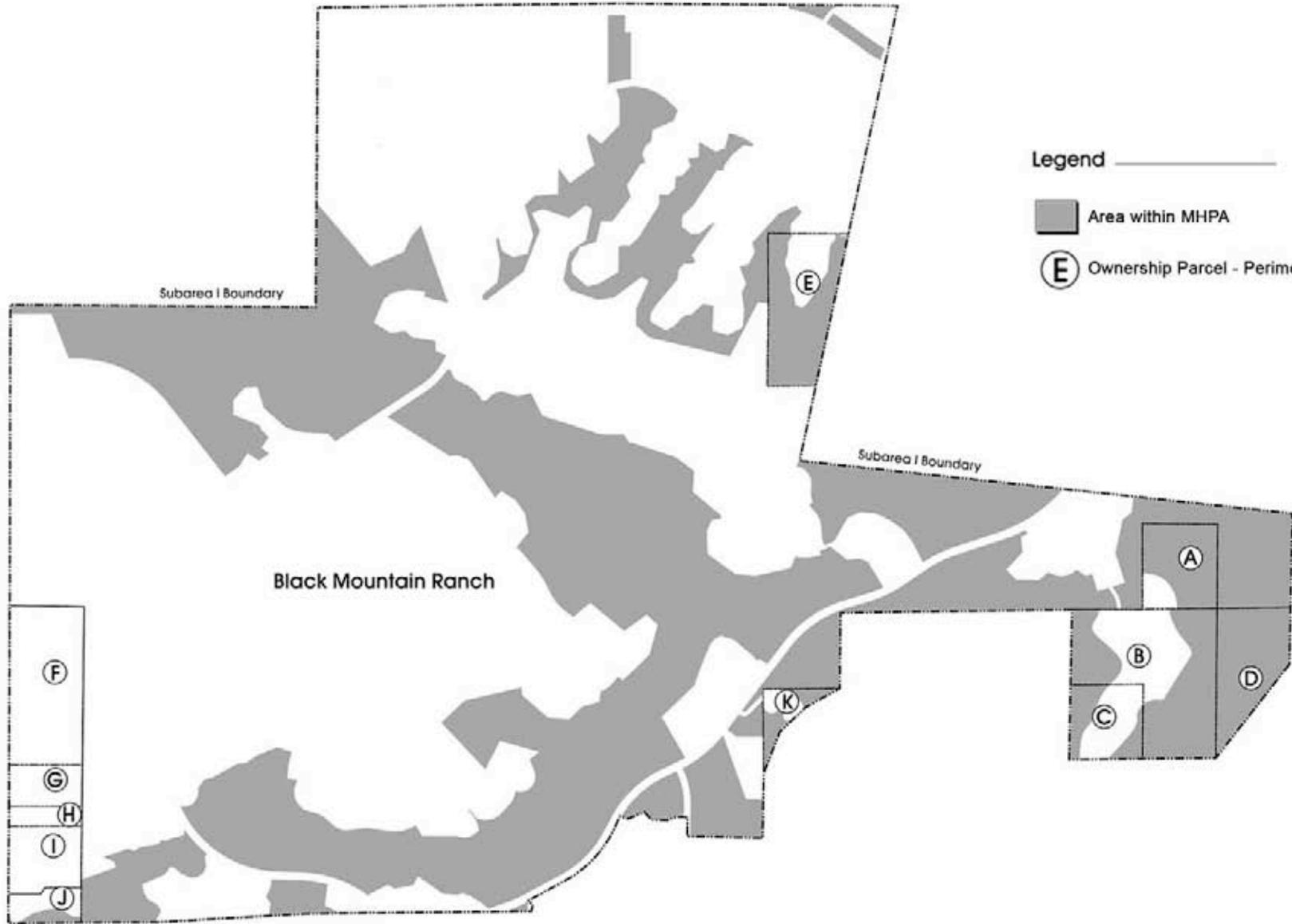
If Subarea I is to be developed with a more traditional suburban land use pattern, some of the same problems may arise relative to connecting neighborhoods while protecting open space. However, these are likely to be less serious because there is not a comparable requirement for massing of development and proximity to transportation facilities.

### **1. Constraint: Impacts on adjacent neighborhoods**

Planning for activities within Subarea I anticipated likely impacts (positive and negative) on adjoining communities. Impacts may relate to traffic, demand for public facilities and services such as schools and libraries, and patronage of local businesses and services. The extent to which these impacts occur will result in part from the circulation and development pattern in Subarea I.

## **C. DEVELOPMENT POTENTIAL**

Much of the land use pattern in Subarea I is a consequence of comprehensive resource analyses performed early in the planning stage. Because of those studies, development areas are sited in response to a range of environmental considerations, including sensitive landforms, steep slopes, wetlands, biological habitats, archeological sites and watercourses. The areas that were found to cause the least



- Legend**
- Area within MHPA
  - E Ownership Parcel - Perimeter Properties



**Council Policy 600-40 Analysis/MHPA Boundary**  
**Black Mountain Ranch Subarea Plan**

**A.2**  
 FIGURE

amount of disturbance to sensitive areas were seen as having the highest development potential, whereas those areas that caused the most disturbance were assigned the lowest development potential (see **Figure A.1**). A substantial portion of the property (approximately 1,945 acres) would be set aside as resource-based open space. To the extent possible, developments and development areas have been located to minimize grading and respect environmentally significant areas.

## **II. RESOURCE PROTECTION ORDINANCE ANALYSIS**

### **A. BACKGROUND**

#### **1. Summary of the Resource Protection Ordinance**

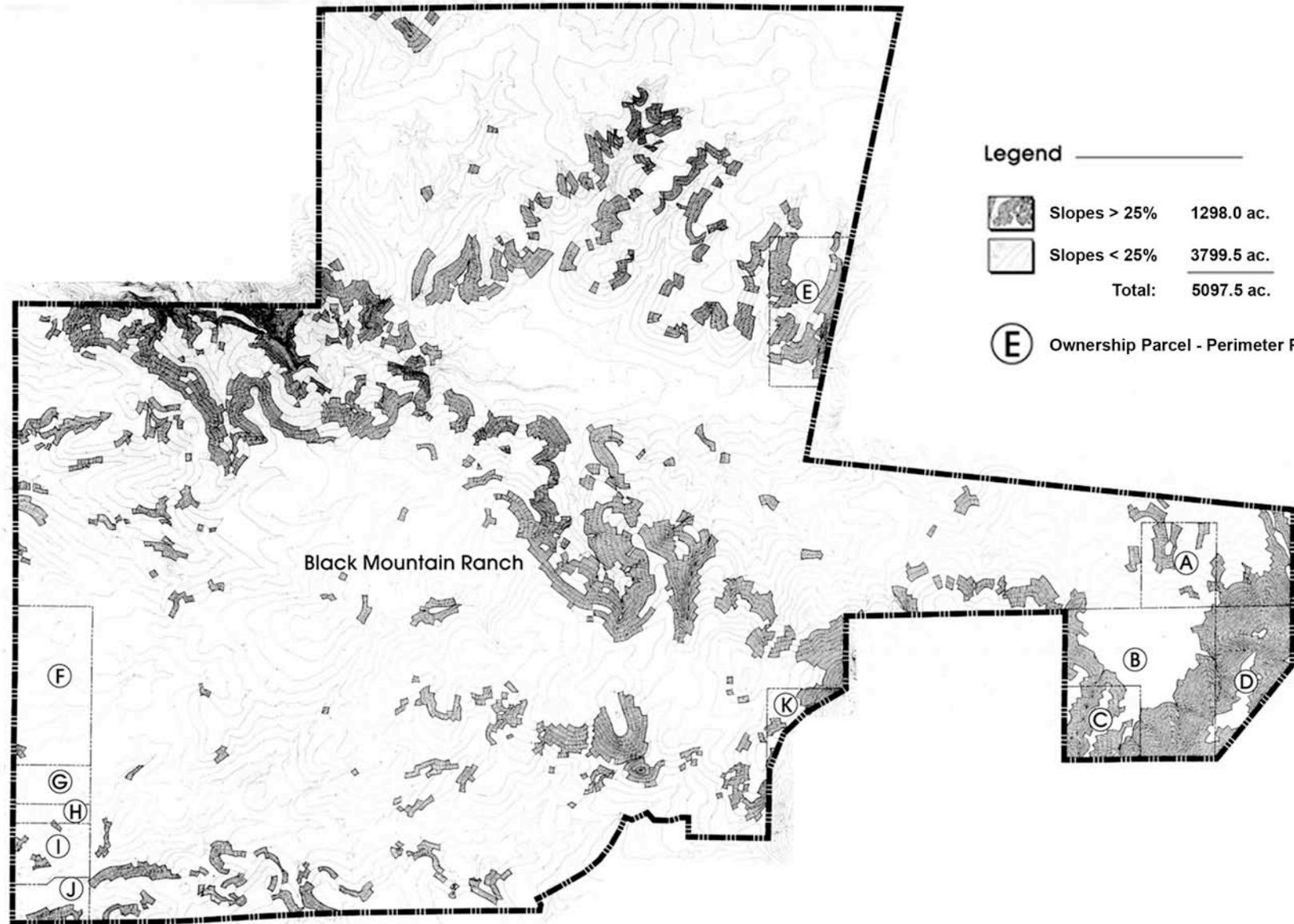
The Resource Protection Ordinance (RPO), adopted by the City Council in February 1989, became effective on March 29, 1989, and was amended on February 19, 1991. The purpose of the ordinance is to regulate development in environmentally sensitive areas of the City such as floodplains, wetlands, hillsides, biologically sensitive lands and significant prehistoric and historic sites and resources.

In March 1997, the Multiple Species Conservation Plan (MSCP) was adopted and superseded the Environmental Tier of the Framework Plan. The MSCP identifies lands for proposed open space and habitat preservation within a MHPA (Multiple Habitat Planning Area). The MHPA identifies areas of the subarea within which conservation of habitat areas and linkages will occur within the “future development areas” as part of the previously approved Black Mountain Ranch VTM/PRD and eleven perimeter properties that together make up the Plan area (see **Figure A.2**).

In December 1997, the City agreed to adopt the Land Development Code, which included regulations protecting biologically sensitive lands of the MSCP. Since the Land Development Code was not scheduled to become effective before May 1998, the City agreed to make the regulations relating to biologically sensitive lands (Ordinance #18456) effective as part of the existing Resource Protection Ordinance.

On January 12, 1998 Ordinance #18456 was adopted which amended RPO and its protection of biological resources. The purpose of this ordinance is to regulate development in areas that contain steep slopes 25 percent and over, wetlands, and sensitive biological resources.

Development that proposes encroachment into steep slopes 25 percent or greater are subject to the regulations of the Hillside Review Overlay Zone pursuant to Section 101.0462.0007 of Ordinance #18456, which states that hillsides containing slopes of 25 percent grade and over shall be preserved in their natural state, provided a minimal encroachment into such lands may be permitted to the extent set forth in the Encroachment Table for Hillsides.



**Council Policy 600-40 Analysis/Slope Analysis**  
**Black Mountain Ranch Subarea Plan**

**A.3**  
**FIGURE**

Development that proposes encroachment into sensitive biological resources and wetlands is subject to the regulations and the Biology Guidelines pursuant to Section 101.0462.0026 of Ordinance #18456, which states that outside the MHPA, encroachment into sensitive biological resources is not limited, however, encroachment into wetlands located outside and inside the MHPA shall be avoided. A wetland buffer shall be maintained around all wetlands when necessary and as appropriate to protect the functions and values of the wetland. Mitigation for wetland impacts associated with a deviation shall achieve in-kind functions and values.

According to the ordinance,

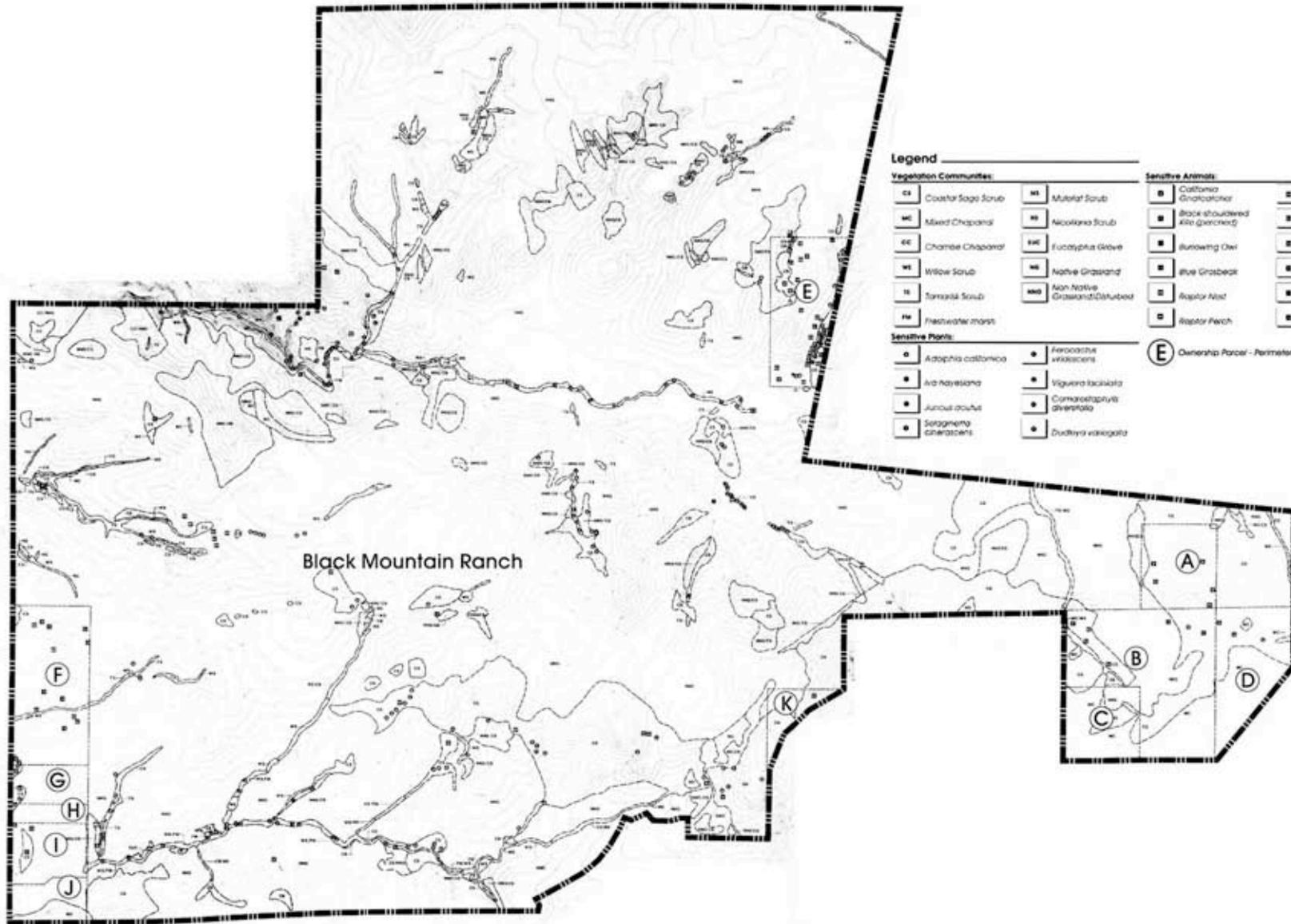
*“...all development occurring in sensitive biological resources both inside and outside the MHPA is subject to a site-specific impact analysis conducted by the City Manager in accordance with the Biology Guidelines. The impact analysis shall evaluate impacts to sensitive biological resources and CEQA sensitive species. The analysis shall determine the corresponding mitigation, where appropriate, and the requirements for protection and management. Mitigation may include the acquisition or dedication of another site of equal or greater value that can serve to mitigate the project impacts; the preservation or dedication of on-site sensitive biological resources, creation of a new habitat, or enhancement of an existing degraded habitat of equal or greater value; or in circumstances where the area of impact is small, monetary payment of compensation into a fund to acquire, maintain and administer habitat areas pursuant to City Council Resolution No. R-275129, adopted February 12, 1990 in lieu of other forms of mitigation.”*

The Council Policy 600-40 requires that all long-range plans demonstrate that a project is consistent with the purpose and intent of the Resource Protection Ordinance (RPO). Long-range plans include a new community plan or community plan update, plan amendment, subarea plan, specific plan, or other mechanism for long-term future planning.

## **2. Overview of existing sensitive resources**

### **a. Topography**

Subarea I consists of approximately 5,098 acres of land. Topographically, the area is characterized by a variety of landforms ranging from flat-lying mesas and gently rolling hills to rugged, steeply sloping hillside terrain. The La Jolla Valley, located in the north-central portion of Subarea I, constitutes the most prominent topographical feature on the site. Running in an east-west direction, La Jolla Valley is bisected by Lusardi Creek, which drains the northern half of Subarea I. The broad valley floor is bounded by gentle to moderately steep slopes in its eastern portion. On the western part of Subarea I, the valley becomes rugged and narrow with steep walls and numerous rock outcrops.



**Council Policy 600-40 Analysis/Biology**  
**Black Mountain Ranch Subarea Plan**

**A.4**  
**FIGURE**



The area north of the valley consists of moderately sloping uplands and mesas that are bisected by four small southerly trending canyons serving as tributaries to Lusardi Creek. South of the valley, the land rises to a northwest/southeast-trending ridge that divides Subarea I hydrologically into its two major drainage units, Lusardi Creek and La Zanja Canyon.

The southern portion of the site contains large expanses of rolling topography, sloping generally to the southwest. The eastern panhandle area encompasses rolling hilly terrain along the northerly and westerly base of Black Mountain.

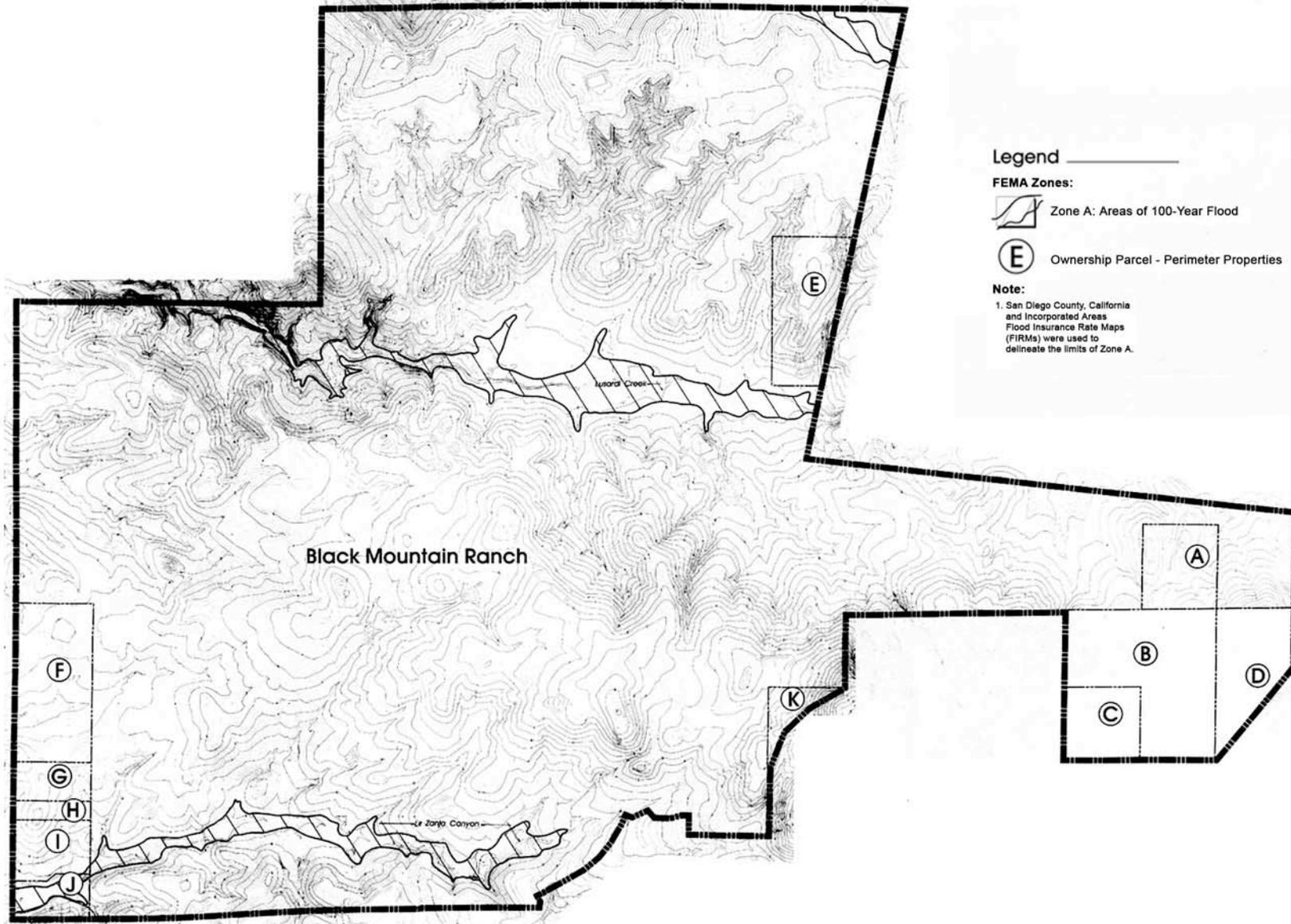
On-site elevations range from 125 feet above mean sea level (MSL) within Lusardi Canyon as it crosses the northwesterly portion of the project site to over 1,100 feet above MSL in that portion of the panhandle adjacent to Black Mountain Park. Off-site, Black Mountain reaches an elevation of 1,550 feet above MSL. It is a dominant feature within the community of Rancho Peñasquitos and can be seen for miles in all directions (see **Figure A.3**).

b. Wetlands

Wetlands include areas mapped as freshwater marsh, southern willow scrub and some areas mapped as tamarisk scrub (see **Figure A.4**). Approximately four acres are considered intact wetlands, while 2.2 acres have been extensively disturbed and are not functional wetland habitat. Wetland delineations have been conducted to define the area falling within the jurisdiction of the U.S. Army Corps of Engineers (USACE) over “waters of the U.S.” includes deposition of fill in “waters of the U.S.” plus adjacent wetlands as defined by the USACE (1987). The wetland delineation also serves to define mitigation measures required by the City’s Resource Protection Ordinance and the California Department of Fish and Game (CDFG), whose policy is no net loss of wetland habitat. Modifications of streambeds are subject to the state Fish and Game Code, Sections 1600-1603, and would require an agreement with the CDFG. These permits have been obtained and a mitigation program consisting of the revegetation of 14 acres of riparian habitat along Lusardi Creek has been undertaken to be in conformance with City guidelines as a result of the approved BMR VTM/PRD project development.

Southern willow scrub and freshwater marsh vegetation types are wetland habitats regulated by the CDFG and the USACE. These riparian habitats have been declining due to the channelization of rivers, streams and drainages for flood control in urbanized areas and due to mining activities.

Other wetlands, including 1.4 acres of tamarisk scrub in the southwest perimeter property and 0.3 acre of riparian woodland in the southeast perimeter property, are within proposed development areas outside the MHPA and could be impacted by access roads and utilities necessary to serve future development. Road and utility crossings would be unavoidable as the wetland areas crisscross a parcel in the southwest or separate parcels under different



**Council Policy 600-40 Analysis/Floodplains**  
**Black Mountain Ranch Subarea Plan**

**A.5**  
**FIGURE**



ownerships in the southeast perimeter. Future development plans would also be required to maintain a 100-foot wide wetlands buffer to be consistent with RPO. Encroachment into wetlands due to residential development would not be consistent with RPO.

The Black Mountain Ranch “future development areas” would impact 4.08 acres of wetlands. These impacts were identified in the 1995 EIR and are included in the RPO analysis for Black Mountain Ranch II VTM/PRD. They are not covered under the existing Black Mountain Ranch 404 or streambed alteration permits, however, they will require separate permit applications to the U.S. Army Corps of Engineering and California Department of Fish and Game.

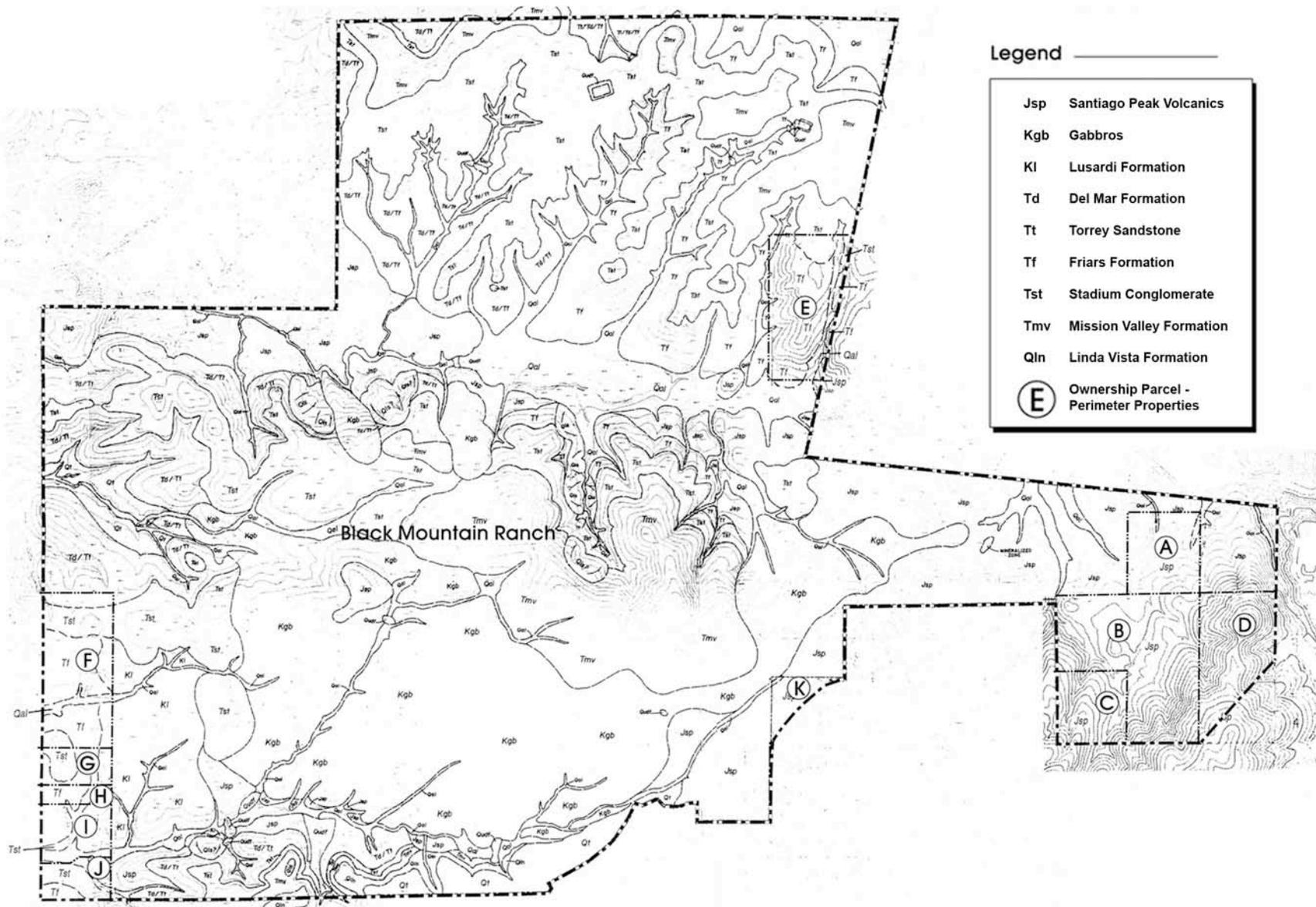
c. Sensitive Biological Resources

Vegetation communities occurring in Subarea I are predominantly non-native grasslands (3,900 acres) resulting from agricultural activities (see **Figure A.4**). The native vegetation includes 856 acres of Diegan coastal sage scrub, 48 acres of southern mixed chaparral, 34.4 acres of southern willow scrub, 27.4 acres of chamise chaparral, 11.7 acres of mule fat scrub, 10.3 acres of native grassland, and 4.5 acres of freshwater marsh. A minimum of ten sensitive plant species are found in Subarea I, including San Diego marsh-elder, adolphia, coast barrel cactus, spiny rush, San Diego sunflower, thornmint and ashy spike-moss.

The native plant communities occurring in Subarea I are capable of supporting a diverse range of wildlife. The California gnatcatcher, a federally listed threatened species and a State Species of Special Concern. The orange-throated whiptail and the San Diego horned lizard, both federal species of concern, have been found in several coastal sage scrub areas. Eleven raptor species have also been observed utilizing the site, eight of which are listed as state Species of Special Concern.

Five habitats considered biologically sensitive by the Resource Protection Ordinance and the City of San Diego’s Biology Guidelines occur in Subarea I: southern willow scrub, freshwater marsh, Diegan coastal sage scrub, southern mixed chaparral and non-native grasslands. Concern for these resources has developed due to their cumulative loss over the last decade, the major threat being urban and industrial development. An increasing number of sensitive species rely upon these communities to breed, forage and reside. These habitats are integral in sustaining viable populations of sensitive plant and wildlife species.

Development within Subarea I and outside the MHPA would encroach on approximately 245.2 acres of sensitive biological resources and 155.9 acres of steep slopes. Although a mitigation program will be established to mitigate the project impacts to sensitive biological resources within the development areas, the encroachment into steep slopes falls within the maximum encroachment



# Council Policy 600-40 Analysis/Geology

## Black Mountain Ranch Subarea Plan

**A.6**

FIGURE

area allowed for Subarea I (179 acres—including exempt areas) as set forth by the Hillside Review Overlay Zone and is therefore consistent. To be in conformance with Ordinance #18456, the mitigation program for sensitive biological resources will consist of land acquisitions or dedications, the preservation or dedication of on-site sensitive biological resources, the creation of new habitats, the enhancement of existing degraded habitats, or monetary payments of compensation into a fund to acquire, maintain and administer habitat areas in lieu of other forms of mitigation.

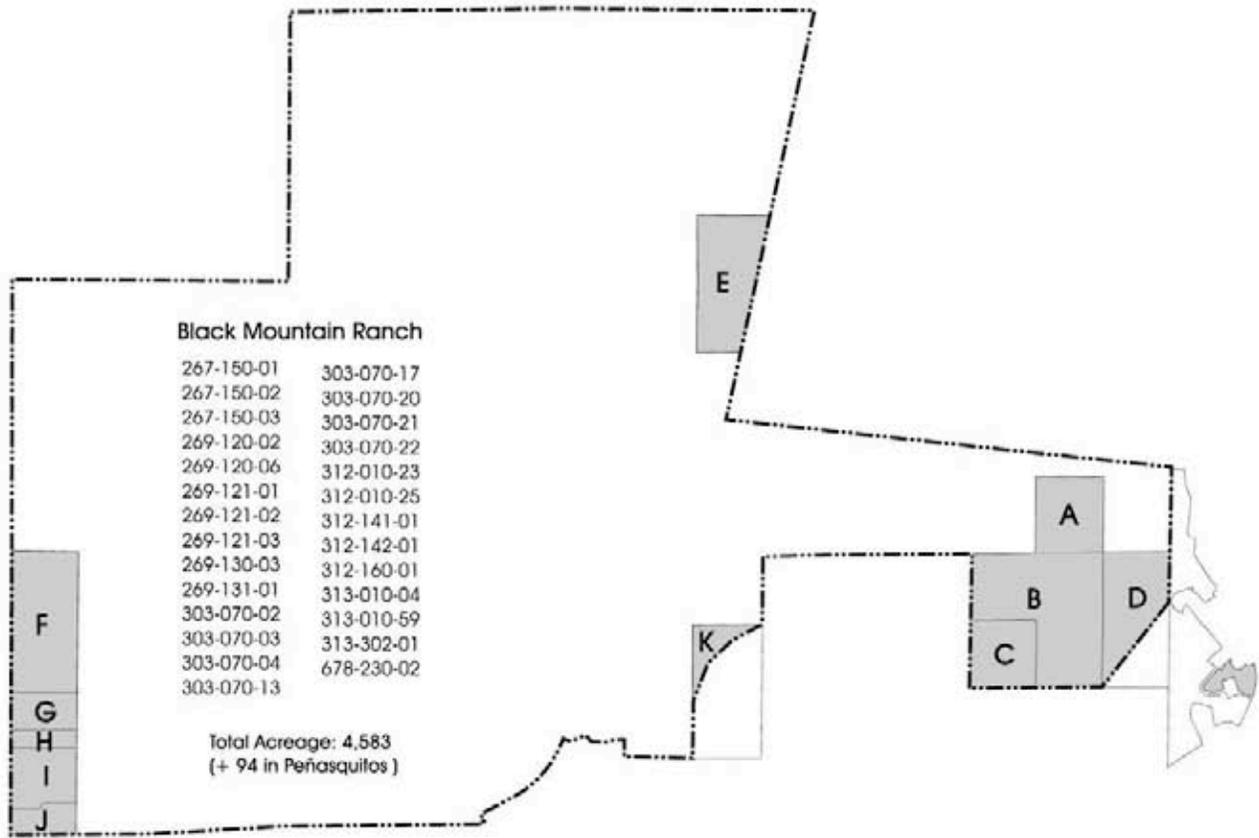
d. Floodplains

Subarea I is located within two major watersheds, the La Jolla Valley and the La Zanja Canyon. Runoff from the project site drains to San Dieguito River by way of an unnamed tributary in La Zanja Canyon in the southwestern portion of Subarea I, and by way of Lusardi Creek in the northwest portion of Subarea I. The San Dieguito River and its tributary creeks are intermittent streams, though they frequently flow for protracted periods.

Surface runoff from a 100-year storm within the two watershed areas was determined by using Flood Insurance Rate Maps (FIRM) for San Diego County and maps prepared by the Federal Emergency Management Agency (FEMA) for California and Incorporated Areas. Based on this information, the limits of inundation for the 100-year storm were derived. **Figure A.5** shows the location of the 100-year floodplains (Zone A) in portions of the southwest corner, central and northeastern corner of Subarea I. Potential flooding may exist in these areas from both heavy rainfall and from a failure of one of the small earthen dams which exist on the site. The adequacy of the capacity and spillway of the reclaimed water reservoir must meet the U.S. Army Corps of Engineers standards. Although no development encroachment is proposed in the floodplains, a tournament golf course is proposed in the canyon drainage which has a portion of the 100-year floodplain. The proposed use is compatible and consistent with the RPO, provided no permanent structures are located within the floodplain.

e. Significant Prehistoric and Historic Resources

There are a total of 53 combined archaeological and historical sites located within Subarea I. These include 19 lithic scatters, ten bedrock milling stations, five habitation sites or camps, seven low-density artifact scatters, a quarry, rock formations, nine locations determined not to be archaeological sites, and a historic homestead. Of these, two sites were found to be significant under RPO and CEQA criteria (CA-SDI-5094 and CA-SDI-11,981), and five were found to be significant under CEQA criteria (CA-SDI-4832/4833, -5103, 6673, -11,982 and -11,983). As conditions of the Black Mountain Ranch VTM/PRD approvals, the RPO significant sites (CA-SDI-5094 and CA-SDI-11,981) and CA-SDI-6673 will be conserved in open space. CA-SDI-4832/4833 and CA-SDI-11,982 have had data recovery procedures performed prior to their destruction. CA-SDI-5103 and CA-SDI-11,983 will have data recovery procedures followed prior to their destruction due to construction of Camino Ruiz and Camino del Norte. All other sites were not found to be significant cultural resources and are not considered further.



**Perimeter Ownerships –**

| Area | APN        | Acreage                    | Area | APN        | Acreage                     |
|------|------------|----------------------------|------|------------|-----------------------------|
| A    | 312-160-02 | 44.8                       | F    | 303-070-07 | 82.1                        |
| B    | 312-010-15 | 125.0                      | G    | 303-070-09 | 20.7                        |
| C    | 312-010-16 | 41.5                       | H    | 303-070-11 | 10.4                        |
| D    | 313-010-59 | 55.0 (+ 25 in Peñasquitos) | I    | 303-070-18 | 30.6                        |
| E    | 312-141-02 | 30.0                       | J    | 303-070-19 | 21.2                        |
|      | 678-230-04 | 37.2                       | K    | 312-010-09 | 16.0. (+ 64 in Peñasquitos) |

Total Acreage: 514.5  
(+ 89 in Peñasquitos)



**Ownership Patterns A.7**  
Black Mountain Ranch Subarea Plan **FIGURE**

f. Geology

Topographically, the property is characterized by landforms ranging from nearly flat-lying mesas and riverbeds to rugged, steeply sloping hillside terrain (see **Figure A.6**). The more rugged terrain is characteristic of the northwestern portions of the property underlain by hard metavolcanic rocks and/or gabbros. The central and northern portions of the property are generally underlain by sedimentary deposits which form a much gentler morphology. Elevations vary from a high of approximately 1,100 feet MSL within the southeastern portion of the site to a low of approximately 125 feet MSL in the area where the northwesterly boundary crosses the bottom of Lusardi Canyon. Natural drainage occurs through a dense network of canyons and ravines that ultimately converge into the San Dieguito River.

Nine geologic formations have been identified within Subarea I and include five Eocene sedimentary units (Delmar Formation, Torrey Sandstone, Friars Formation, Stadium Conglomerate and Mission Valley Formation). The four remaining formations are the Quaternary Lindavista Formation, Cretaceous Lusardi Formation, Cretaceous igneous rocks of the southern California batholith and the Jurassic-aged Santiago Peak Volcanics. Six types of surficial material were observed at the site and they consist of fill, topsoil, alluvium, colluvium, landslides and stream terrace deposits.

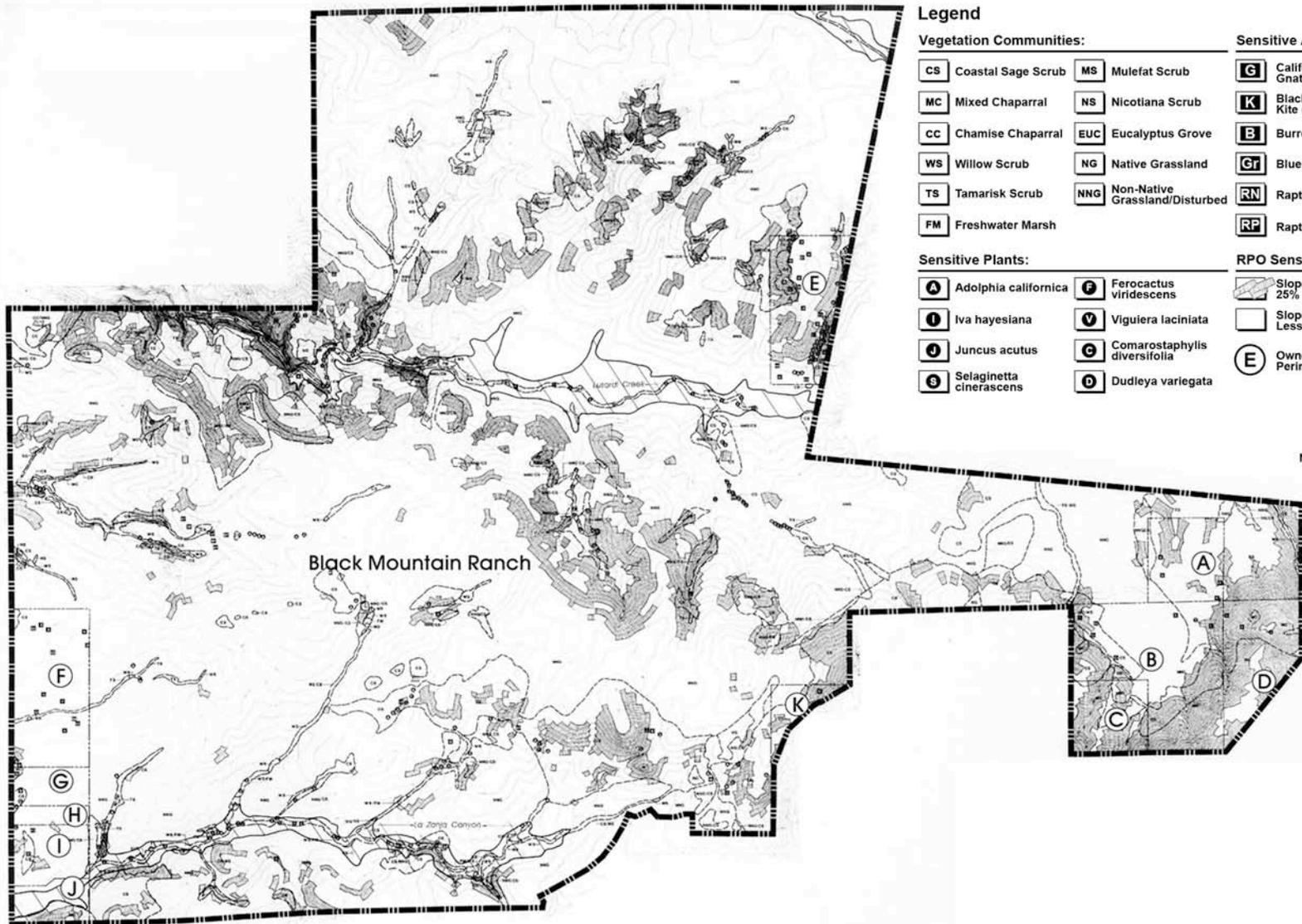
Several geomorphic features were noted in Subarea I including ancient landslides, rockfall potential, liquefaction, faulting and seismicity that may be attributable to the erosion characteristics of the underlying bedrock materials. Although no known active faults were found to transect the site and no significant soil or geologic conditions are known to exist, an appropriate geotechnical investigation including subsurface exploration, laboratory testing and analysis should be performed to assess potentially significant geologic conditions that would require mitigation subsequent to the development of any future tentative maps.

## **B. PARCEL-BY-PARCEL RPO EVALUATION**

This Plan is required to analyze Resource Protection Ordinance (RPO) conformance on parcel-by-parcel or ownership basis per Council Policy 600-40.

The policy requires that long-range plans be reviewed for consistency with the RPO. **Figure A.7** illustrates ownership parcelization within Subarea I. It should be noted that parcel location and acreage have been determined through assessor parcel maps provided by the county. Actual parcel sizes and boundaries may vary, as field surveys will establish more specific parcel boundaries.

This analysis is intended to provide an overall understanding and description of the effects of RPO among individual parcels and owners as required by Council Policy 600-40.



**Legend**

**Vegetation Communities:**

- CS** Coastal Sage Scrub
- MC** Mixed Chaparral
- CC** Chamise Chaparral
- WS** Willow Scrub
- TS** Tamarisk Scrub
- FM** Freshwater Marsh
- MS** Mulefat Scrub
- NS** Nicotiana Scrub
- EUC** Eucalyptus Grove
- NG** Native Grassland
- NNG** Non-Native Grassland/Disturbed

**Sensitive Plants:**

- A** Adolphia californica
- I** Iva hayesiana
- J** Juncus acutus
- S** Selaginella cinerascens
- F** Ferocactus viridescens
- V** Viguiera laciniata
- G** Comarostaphyllis diversifolia
- D** Dudleya variegata

**Sensitive Animals:**

- G** California Gnatcatcher
- K** Black-shouldered Kite (perched)
- B** Burrowing Owl
- Gt** Blue Grosbeak
- RN** Raptor Nest
- RP** Raptor Perch
- NH** Northern Harrier
- GS** Grasshopper Sparrow
- GH** Great Horned Owl
- R** Rufous Crowned Sparrow
- L** Logger Head Shrike
- HL** Horned Lark

**RPO Sensitive Slopes:**

- Slopes of 25% or Greater
- Slopes of Less than 25%
- E** Ownership Parcel - Perimeter Properties

**FEMA Zones:**

- Zone A: Areas of 100-Year Flood

Note: San Diego County, California and Incorporated Areas Flood Insurance Rate maps (FIRMs) were used to delineate the limits of Zone A.



**Council Policy 600-40 Analysis/Composite of Sensitive Lands**

**Black Mountain Ranch Subarea Plan**

**A.8**

**FIGURE**

The Resource Protection Ordinance determines an encroachment allowance for development based upon the percentage of sensitive lands within each parcel. Sensitive lands are referred to as areas containing steep slopes of 25 percent grade and over, wetlands, sensitive biological resources, archaeology and floodplains. The RPO describes the encroachment allowance and further defines sensitive lands. **Figure A.8** represents a composite map of sensitive lands with ownership/parcel boundaries identified.

**Table A.1** presents the effects of RPO on an ownership/parcel basis. Each parcel within Subarea I has been evaluated with respect to its location relative to the MHPA (percent in, percent out), and to steep slopes of 25 percent or greater. The analysis is based on the procedures as outlined in the Hillside Review Overlay Zone, 1984, Resource Protection Ordinance, 1991, and the interim RPO Ordinance #18456, 1998.

Based on the analysis, conformance to the RPO encroachment allowance varies among all of the parcels. In some cases, some of the proposed development exceeds the encroachment allowance, however, most of the parcels within the Plan are under the allowed encroachment for development.

Although variances between the individual parcels represent either conformance or nonconformance. with the RPO Guidelines, on an overall subarea plan level, Subarea I proposes to develop 3,095 acres. The RPO analysis for Subarea I allows for the development of 3,222.65 acres. Therefore, on a subarea plan or long-range plan level, Subarea I is consistent with the Resource Protection Ordinance.

### **III. GENERAL PLAN AND OTHER CITY POLICIES**

#### **A. CONFORMANCE WITH THE FRAMEWORK PLAN**

The design and implementation of the Subarea I open space program conforms to the goals and objectives of the Framework Plan. The program results in:

- 1. The creation of the MHPA as an interconnected and viable system of natural open spaces, and adherence to the General Plan, the Resource Protection Ordinance (RPO) and the Environmentally Sensitive Lands Ordinance (ESL) by restoration and preservation of the MHPA.**

Subarea I proposes to provide approximately 3,065 acres of open space within Subarea I of the Framework Plan. The distribution of that open space will be 1,945 acres of resource based open space, 1,070 acres will be maintained as amenity open space, including golf courses, pursuant to permanent open space easements, and 50 acres developed parkland, for a total of approximately 3,065 acres of open space. The open space being proposed will provide an effective regional open space system, connecting Black Mountain Park with the San Dieguito River, enhancing the Lusardi Creek Riparian corridor and providing wildlife corridors and crossings throughout the plan area.

**TABLE A.1  
RPO ANALYSIS**

| Parcel/Letter Location                        | Total Parcel Acreage <sup>1</sup> | Acreage Within MHPA | Percent Within MHPA | Percent Outside MHPA <sup>2</sup> | Addition %/ac. Development Area to Achieve 25% Maximum | 25% Slope Acreage | Non-25% Slope Acreage | 25% Slope Acreage Within MHPA | 25% Slope Acreage Outside MHPA | % of Parcel With 25% Slope | Per RPO Maximum Encroachment (%) Into 25% Slope <sup>3</sup> |             | Per RPO Maximum Encroachment (acres) Into 25% Slope <sup>3</sup> |             | 25% Slope Acreage Impacted by Proposed Development | Maximum Development Area Per RPO <sup>4</sup> | Maximum Development Area Per Suburban Plan <sup>5</sup> |
|---|-----------------------------------|---------------------|---------------------|-----------------------------------|--|-------------------|-----------------------|-------------------------------|--------------------------------|----------------------------|--|-------------|--|-------------|--|---|---|
|   |                                   |                     |                     |                                   |  |                   |                       |                               |                                |                            | Dev. Area  | Exempt Area | Dev. Area  | Exempt Area |  |   |   |
| A/southeast <sup>6</sup>                      | 44.8                              | 39.9                | 89%                 | 11%                               | 14%/6.3 ac.  | 9.2               | 35.6                  | 9.2                           | 0.0                            | 20%                        | 0%   | 0%          | 0.0  | 0.0         | 0.0  | 11.20   | 5.0   |
| B/southeast <sup>6</sup>                      | 125.0                             | 86.0                | 69%                 | 31%                               | 0%   | 52.8              | 72.2                  | 52.8                          | 0.0                            | 42%                        | 0%   | 0%          | 0.0  | 0.0         | 0.0  | 39.00   | 39.0  |
| C/southeast <sup>6</sup>                      | 41.5                              | 19.5                | 47%                 | 53%                               | 0%   | 23.2              | 18.3                  | 13.5                          | 9.7                            | 56%                        | 8%   | 0%          | 1.9  | 0.0         | 9.7  | 14.20   | 22.0  |
| D/southeast                                   | 55.0 <sup>7</sup>                 | 55.0                | 100%                | 0%                                | 25%/13.75 ac.  | 47.4              | 7.6                   | 47.4                          | 0.0                            | 86%                        | 16%  | 0%          | 7.6  | 0.0         | 0.0  | 13.75   | 0.0 <sup>8</sup>  |
| E/northeast <sup>6</sup>                      | 67.2                              | 47.2                | 70%                 | 30%                               | 0%   | 30.6              | 36.6                  | 28.6                          | 2.0                            | 46%                        | 6%   | 0%          | 1.8  | 0.0         | 2.0  | 19.80   | 20.0  |
| F/southwest                                   | 82.1                              | 0.0                 | 0%                  | 100%                              | 0%   | 0.6               | 81.5                  | 0.0                           | 0.6                            | 1%                         | 0%   | 0%          | 0.0  | 0.0         | 0.6  | 81.50   | 82.0  |
| G/southwest                                   | 20.7                              | 0.0                 | 0%                  | 100%                              | 0%   | 0.0               | 20.7                  | 0.0                           | 0.0                            | 0%                         | 0%   | 0%          | 0.0  | 0.0         | 0.0  | 20.70   | 21.0  |
| H/southwest                                   | 10.4                              | 0.0                 | 0%                  | 100%                              | 0%   | 0.1               | 10.3                  | 0.0                           | 0.1                            | 1%                         | 0%   | 0%          | 0.0  | 0.0         | 0.1  | 10.30   | 10.0  |
| I/southwest                                   | 30.6                              | 0.0                 | 0%                  | 100%                              | 0%   | 2.3               | 28.3                  | 0.0                           | 2.3                            | 8%                         | 0%   | 0%          | 0.0  | 0.0         | 2.3  | 28.30   | 31.0  |
| J/southwest <sup>6</sup>                      | 21.2                              | 5.2                 | 25%                 | 75%                               | 0%   | 3.9               | 17.3                  | 3.9                           | 0.0                            | 18%                        | 0%   | 0%          | 0.0  | 0.0         | 0.0  | 16.00   | 16.0  |
| K/southeast <sup>6</sup>                      | 16.0 <sup>9</sup>                 | 10.0                | 63%                 | 37%                               | 0%   | 4.9               | 11.1                  | 4.9                           | 0.0                            | 31%                        | 2%   | 0%          | 0.1  | 0.0         | 0.0  | 6.00  | 6.0   |
| <b>Subtotal</b>                               | <b>514.5</b>                      | <b>262.7</b>        | <b>51%</b>          | <b>49%</b>                        | <b>20.05 ac.</b>                                       | <b>175.17</b>     | <b>339.5</b>          | <b>160.3</b>                  | <b>14.7</b>                    |                            |  |             | <b>11.4</b>  | <b>0.0</b>  | <b>14.7</b>  | <b>260.75</b>                                 | <b>252.0</b>  |
| Black Mountain Ranch VTM (exclusive of FDA)   | 3,690.0 <sup>10</sup>             | 1,501.0             | 41%                 | 59%                               | 0%   | 1,069.8           | 2,620.2               | 834.4                         | 235.4                          | 11%                        | 10%  | 5%          | 107.0  | 53.5        | 88.0   | 2,114.10                                      | 1,950.0   |
| Black Mountain Ranch-Future Development Areas | 893.0                             | 0.0                 | 0%                  | 100%                              | 0%   | 53.2              | 839.8                 | 0.0                           | 53.2                           | 6%                         | 10%  | 5%          | 5.3  | 2.7         | 53.2   | 847.8   | 893.0   |
| <b>Subtotal</b>                               | <b>4,583.0</b>                    | <b>1,501.0</b>      | <b>33%</b>          | <b>67%</b>                        | <b>0%</b>  | <b>1,123.0</b>    | <b>3,460.0</b>        | <b>834.4</b>                  | <b>288.6</b>                   |                            |  |             | <b>112.3</b>   | <b>56.2</b> | <b>141.2</b>                                       | <b>2,961.90</b>                               | <b>2,843.0</b>  |
| <b>Total for Subarea I</b>                    | <b>5,097.5</b>                    | <b>1,763.7</b>      | <b>35%</b>          | <b>65%</b>                        | <b>20.05</b>   | <b>1,298.17</b>   | <b>3,799.5</b>        | <b>994.7</b>                  | <b>303.3</b>                   |                            |  |             | <b>123.7</b>   | <b>56.2</b> | <b>155.9</b>                                       | <b>3,222.65</b>                               | <b>3,095.0</b>  |

1. Acreage areas are approximate only, based on assessor parcel maps and polar planimeter. They are subject to change pending a boundary survey, further refinement of design and engineering.
2. Development that proposes encroachment into sensitive biological resources is subject to the regulations and the Biology Guidelines in the Land Development Manual, which states that outside the MHPA, encroachment into sensitive biological resources is not limited, except when proposed development impacts wetlands as set forth in Section 101.0462.0026 (b). All development occurring in sensitive biological resources both inside and outside the MHPA is subject to a site-specific impact analysis conducted by the City Manager in accordance with the Biology Guidelines. The impact analysis shall evaluate impacts to sensitive biological resources and CEQA sensitive species. The analysis shall determine the corresponding mitigation, where appropriate, and the requirements for protection and management. Mitigation may include the acquisition or dedication of another site of equal or greater value that can serve to mitigate the project impacts; the preservation or dedication of on-site sensitive biological resources, creation of a new habitat, or enhancement of an existing degraded habitat of equal or greater value; or in circumstances where the area of impact is small, monetary payment of compensation into a fund to acquire, maintain and administer habitat areas pursuant to City Council Resolution No. R-275129, adopted February 12, 1990 in lieu of other forms of mitigation.
3. Encroachment into 25% slopes must be outside MHPA.
4. Maximum "Developable" area per RPO is the sum of the encroachment allowances and the areas with no sensitive resources. Some of these areas are inaccessible or in configurations which preclude development.
5. Maximum "Developable" area per subarea plan is the sum of the development area and a 70-foot brush management area where applicable. The brush management area is included in anticipation of disturbance of sensitive biology.
6. If the property is located partially within the boundary of the MHPA, any development proposed must occur on the portion of the premises not within the MHPA. If the portion of the premises not within the MHPA boundary is less than 25 percent of the premises area, encroachment into the MHPA may be permitted to achieve a maximum development area of 25 percent of the premises.
7. Does not include approximately 25 acres within Rancho Peñasquitos.
8. Property is entitled, however, to develop a maximum of 25% (13.75 acres) per the Development Regulations for Sensitive Biological Resources for properties within the MHPA (Section 101.0462.0026 (d) (I)).
9. Does not include approximately 64 acres within Rancho Peñasquitos.
10. Does not include 94 acres originally included within VTM 95-0173 adjacent to Rancho Peñasquitos.

- 2. The preservation of lands such as significant topographic features, including canyons and hillsides, that are designated in the General Plan as part of the MHPA through the provision of public and private open space easements and/or dedications, where appropriate.**

Subarea I provide 3,065 acres in open space, of which approximately 1,945 acres will be set aside as permanent open space and parks. The remaining acreage would be preserved through permanent open space easements for recreational uses as well as for brush management lots to protect health, safety and welfare. This would protect biologically sensitive habitat identified in the MHPA. The 1,945 acres set aside as resource based open space may be enhanced by the removal of invasive species and the revegetation and preservation of native species.

- 3. The refinement of the MHPA as a result of detailed land use planning and field assessment of natural resources.**

Subarea I is consistent with the FUA Framework Plan including an amendment to the Framework Plan which proposes to implement the MHPA open space boundaries. That consistency was achieved by addressing framework planning issues during the design phase of Subarea I. Land use is consistent with the surrounding communities. The character and scale of development will be varied with the open space areas representing approximately 65 percent of the land use on the site. Development has been directed to areas of limited environmental resources and, where encroachment has been unavoidable, detailed mitigation programs have been established to revegetate impacted habitats. The project will provide or contribute to the construction of both local and regional facilities and capital improvements. Wildlife corridors and crossings provided in accordance with the MHPA are consistent with the goals of the FUA Framework Plan.

#### **IV. PRIOR APPROVALS AND RECOMMENDATIONS**

##### **A. CITY COUNCIL RECOMMENDATIONS**

In October 1992, the NCFUA Framework Plan was adopted by the San Diego City Council as an amendment to the City's Progress Guide and General Plan, which included the Environmental Tier Concept.

In March, 1997 the MSCP was adopted by the San Diego City Council. The MSCP supersedes the Environmental Tier of the Framework Plan.

---

# **APPENDIX B**

## Landscape Guidelines

# APPENDIX B. LANDSCAPE GUIDELINES

---

## I. LANDSCAPE GUIDELINES

The landscape philosophy for the Black Mountain Ranch Subarea focuses on blending people, structures, and open spaces into a harmonious and aesthetically pleasing residential community which places primary emphasis on the preservation and enhancement of natural topography and native vegetation. Landscape Guidelines have been developed to implement this philosophy and address technical aspects of both the natural and built landscapes.

### A. OVERALL PROJECT CRITERIA

#### 1. Landscape Categories

Landscape areas in Black Mountain Ranch Subarea are categorized based on their intensity of water usage and maintenance requirement.

- a. Native Areas (Existing Riparian, Coastal Sage, Grassland and Chaparral Habitat)

These are existing vegetated areas undisturbed by construction operations. Only natural rainfall is required for irrigation. Periodic clean-up and pruning of seasonal growth and removal of invasive exotic species may be required. (Areas where invasive exotic species have been removed will be seeded as Naturalized Areas.)

- b. Naturalized Areas (Enhanced and New Coastal Sage, Grassland and Chaparral Habitat)

These are newly planted areas with native and naturalizing vegetation; only temporary irrigation will be provided. Once plants become established, they are capable of surviving without artificial irrigation. Periodic cleanup and pruning of seasonal growth and removal of invasive exotic species may be required. Suitable plant materials are listed on **Table 2** under the heading of Coastal Sage Habitat Revegetation Plant Palette. See Brush Management Program limitation for planting of Brush Management Zones.

- c. Riparian Areas (Enhanced and New Willow Scrub, Riparian Woodland and Marsh Habitat)

These are existing corridors which will be enhanced in quantity and quality with revegetated riparian plants. Temporary irrigation will be provided. Periodic cleanup and pruning of seasonal growth and removal of exotic species may be required. Suitable plant materials are listed on **Table 2** under the Willow Scrub, Riparian Woodland and Marsh Habitat Revegetation Plant Palette.

- d. Drought Tolerant Areas (Street Accent Planting, Streetscape Planting, Buffer Planting and Naturalized Drought Tolerant Grasses)

These are areas newly planted with drought tolerant vegetation and provided with permanent irrigation systems. Water demand will be low, requiring substantially less irrigation than ornamental areas. Regular maintenance will be required. Plant materials for drought tolerant areas may include plants from the approved plant palette on **Table 1** or from the coastal sage habitat vegetation plant palette on **Table 2**.

e. Transitional Areas

These are disturbed areas or manufactured slopes which lie between areas of native vegetation and Ornamental Areas. They will be revegetated in a manner to provide visual and horticultural compatibility with adjacent native plant materials, while transitioning to the Ornamental landscape. Planting and irrigation will follow the criteria of Naturalized Areas.

f. Ornamental Areas

These are areas with a high degree of usage and visual impact such as parks, villages and clubhouses that will be planted with ornamental vegetation and provided with permanent irrigation systems. Regular maintenance will be required. Plant materials in Ornamental areas may include any plants except those listed on the Prohibited Plant Palette on **Table 1**.

g. Golf Courses

Golf course areas will be planted with a combination of ornamental, drought tolerant and naturalized vegetation and will be provided with permanent and temporary irrigation systems designed to support these different vegetation types. These areas will require daily maintenance.

## **2. Landscape Concept Plan**

The majority of plant materials will be drought tolerant and composed in large-scale random and informal masses to reduce and soften, and not reinforce the framework of roads and development. Golf courses will appear as green oases blended within the native landscape through transitional vegetation zones. Formal landscape schemes shall be reserved for the north and south villages.

All landscaping within the project shall conform to standard horticultural practices, the Citywide Landscape Regulations SDMC 142.040 and all other applicable City and regional standards for landscape installation and maintenance.

## **3. Prohibited Plants Palette**

**Table 1** includes a list of plant species with characteristics which are potentially destructive to native vegetation and open space by reason of profuse and noxious pollen, excessive height, weed-like characteristics of excessive growth, high water demands and other undesirable traits. Under no circumstances shall any plant listed on the Prohibited Plant Palette be planted within Black Mountain Ranch. Moreover, these species will be periodically eradicated when found in substantial quantity in any area of the project.

**TABLE 1**  
**PALETTE OF APPROVED AND PROHIBITED PLANTS**

(Note: Does not include revegetation palette)

| <b>SECTION 1: APPROVED PLANT PALETTE</b>   |   |                                   |
|--|---|-----------------------------------|
| <b>Trees</b>                               | <b>Drought Tolerant Grasses/Wildflowers</b> | <b>Shrubs/Groundcover (cont.)</b> |
| Albizia julibrissin                        | Agapanthus africanus                        | Cotoneaster spp.                  |
| Alnus rhombifolia                          | Anemopsis californica                       | Distictis buccinatoria            |
| Angophora costa                            | Aristida pulchra                            | Dendromecon spp.                  |
| Brachychiton populneus                     | Bromus cariratus                            | Echium fastuosum                  |
| Calodendrum capense                        | Buchloe dactyloides                         | Elaeagnus pungens                 |
| Cedrus deodora                             | Clarkia amoena                              | Encelia spp.                      |
| Citrus "thornless" spp.                    | Collinsia heterophylla                      | Eriogonum spp.                    |
| Eucalyptus cladocalyx                      | Eriophyllum confertiflorum                  | Escallonia spp.                   |
| Eucalyptus ficifolia                       | Eriophyllum nevinii                         | Fremontodendron spp.              |
| Eucalyptus lehmannii                       | Eschscholzia californica                    | Gazania spp.                      |
| Eucalyptus nicholii                        | Festuca longifolia                          | Grevillea spp.                    |
| Eucalyptus spathulata                      | Festuca rubra                               | Hedera spp.                       |
| Eucalyptus torquata                        | Hemerocallis spp                            | Heteromeles spp.                  |
| Hymenosporum flavum                        | Hrdeum brachyantherum                       | Hibiscus spp.                     |
| Jacaranda mimosifolia                      | Isomeris arborea                            | Hypericum spp.                    |
| Koelreuteria bipinnata                     | Lasthenia chrysostoma                       | Isomeris arborea                  |
| Pinus halepensis                           | Layia platglossa                            | Lantana spp.                      |
| Pinus pinea                                | Linanthus gradiflorus                       | Leptospermum spp.                 |
| Pinus torreyana                            | Lupinus bicolor                             | Ligustrum japonica                |
| Pistachia chinensis                        | Lupinus nanus                               | Limonium perezii                  |
| Platanus racemosa                          | Nernohila menziesii                         | Losma congestum                   |
| Populus fremontii                          | Orthocarpus purpurascens                    | Mohonia spp.                      |
| Pyrus calleryana                           | Phacelia campanularia                       | Melaleuca spp.                    |
| Quercus agrifolia                          | Phonnum tenax                               | Myoporum pacificum                |
| Salix species                              | Sisyrinchium bellum                         | Oleander spp.                     |
| Schinus molle                              | Stipa cemua                                 | Pelargonium peltatum              |
| Tabebuia avellanadae                       | Stipa pulchra                               | Pittosporum crassifolium          |
| Tipuana tipu                               |   | Plantago insulari                 |
| Ulmus parvifolia                           |   | Plumbago auriculata               |
| Zelkova serrata                            |   | Prunus caroliniana                |
|  | <b>Shrubs/Groundcover</b>                   | Prunus Iyonii                     |
|  | Acacia spp.                                 | Punica granata                    |
|  | Agapanthus spp.                             | Quercus dumosa                    |
|  | Agave spp.                                  | Rhaphiolepis indica               |
|  | Aloe spp.                                   | Rhus integrifolia                 |
|  | Arbutus unedo                               | Ribes spp.                        |
|  | Arctostaphylos spp.                         | Rosmarinus spp.                   |
|  | Artriplex spp.                              | Salvia spp.                       |
|  | Baccharis spp.                              | Santolina spp.                    |
|  | Bougainvillea spp.                          | Strelitzia nicolai                |
|  | Buxus spp.                                  | Verbena spp.                      |
|  | Carissa macrocarpa                          | Wisteria sinensis                 |
|  | Cassia spp.                                 | Xylococcus bicolor                |
|  | Ceanothus spp.                              |                                   |
|  | Cistus spp.                                 |                                   |
| <b>SECTION 2: PROHIBITED PLANT PALETTE</b> |   |                                   |
| Ailanthus altissima                        | Cynara scolymus                             | Ricinus communis                  |
| Arundo donax                               | Foeniculum vulgare                          | Salsola salina                    |
| Atriplex semibaccata                       | Melilotus spp.                              | Spartium junceum                  |
| Brassica spp.                              | Nicotiana glauca                            | Tamari spp.                       |
| Broussonetia papyrifera                    | Pennisetum setaceum                         | Xanthium strumarium               |
| Cortaderia selloana                        | Picris echiodeso                            |                                   |
| Cynara cardunculus                         | Rhynchelytrum repens                        |                                   |

**TABLE 2**  
**REVEGETATION PLANT PALETTE**

---

**RIPARIAN AREAS:  
WILLOW SCRUB, MARSH AND RIPARIAN WOODLAND  
HABITAT REVEGETATION PLANT PALETTE**

---

**Trees**

Platanus racemosa  
Populus fremontii  
Quercus agrifolia  
Salix species  
Sambucus mexicana

**Shrubs/Groundcover**

Ambrosia psilostachya  
Anemopsis californica  
Artemisia douglasiana  
Artemisia palmeri  
Baccharis glutinosa  
Carex spissas  
Iva haysiana  
Juncus acutus  
Juncus mexicanus  
Mimulus guttatus  
Oenothera hookeri  
Pluchea purpurascens  
Ribes speciosum  
Ribes vibumifolium  
Rosa californica  
Rubus ursinus  
Scirpus acutus  
Scirpus olneyi  
Scirpus robustus  
Typha latifolia

---

**NATURALIZED AREAS AND DROUGHT TOLERANT AREAS:  
COASTAL SAGE HABITAT REVEGETATION PLANT PALETTE**

---

**Trees/Shrubs/Groundcover**

Adolphia californica (container plant)  
Artemisia californica  
Comarostaphylis diversifolia (container plant)  
Encelia californica  
Eriodictyon trichocalyx  
Erigonium fasciculatum  
Eriophyllum confertiflorum  
Eschscholzia californica  
Ferocatus viridescens (salvaged from exst.)  
Gnaphalium californicum  
Haplopappus squarrosus  
Heteromeles arbutifolia (container plant)  
Lotus scoparius  
Malosm laurina (container plant)  
Mimulus puniceus  
Nemophila menziesii  
Quercus agrifolia (container plant)  
Quercus dumosa (container plant)  
Rhus integrifolia  
Salvia apiana  
Salvia leucophylla  
Salvia mellifera  
Selaginella cinerascens (salvaged from exst.)  
Xylococcus bicoIor (container plant)

---

**Wildflowers**

Clarkia amoena  
Collinsia heterophylla  
Layia platyglossa  
Linanthus grandiflorus  
Lupinus nanus  
Orthocarpus purpurascens  
Phacelia campanularia

**Grasses**

Bromus carinatus  
Eriophyllum confertiflorum  
Hordeum brachyantherum  
Lasthenia chrysostoma  
Lupinus bicolor  
Lupinus nanus  
Nemophila menziessi  
Sisyrinchium bellum  
Stipa pulchra

---

#### **4. Approved Plant Palette**

**Table 1** includes an Approved Plant Palette with species whose characteristics are inherently compatible with the native vegetation existing at Black Mountain Ranch. Any species not contained in the list of Approved Plants shall not be used without the specific formal approval of the City of San Diego at the time of discretionary review.

#### **5. Slope Revegetation**

All graded slopes will be promptly revegetated in compliance with City requirements and in conformance with the overall landscape concept.

#### **6. Irrigation Standards**

All irrigation systems shall conform to the Citywide Landscape Regulations SDMC 142.040 and all other applicable City and regional standards for irrigation installation and maintenance. Irrigation systems shall be designed so that separate areas of maintenance responsibility are metered and controlled independently. Irrigation within any Landscape Maintenance Districts shall be coordinated with the City of San Diego Parks and Recreation department to assure conformance to standard equipment and installation techniques.

All permanent irrigation systems will be below ground, automatically controlled and in full compliance with building code requirements. The irrigation system will utilize reclaimed water to the maximum extent available and permissible. Water conserving systems such as drip irrigation, moisture sensors, low gallonage heads and matched precipitation rate heads will be used. In addition, central computer control systems will be used for the golf courses. Temporary irrigation systems in naturalized or native areas may utilize above ground systems. All backflow control devices will be located or screened from public view. Habitat areas in the riparian zone will be watered with a combination of overhead spray and drip emitters. The riparian zone system will be installed permanently but used only during initial plant establishment.

#### **7. Maintenance**

All landscape maintenance shall conform to community requirements and to the Citywide Landscape Regulations SDMC 142.040 and all other applicable City and regional standards for landscape maintenance. Maintenance responsibilities are divided into the following categories:

##### **a. Individual Property Owner Maintenance**

Residential and commercial property owners will be required to maintain landscaping within their lot in conformance with the criteria in CC&Rs which will be established, administered and enforced by Property Owners Associations.

b. Property Owners Association Maintenance

Property Owners Associations' areas of maintenance will include private recreation areas, property owners common open space, Brush Management Zone #2, and private street and entry landscaping.

c. Public Agency Maintenance

Any public park, open space, school, or utility, public street medians and parkways will be maintained by the jurisdictional agency in accordance with their standards. Landscape Maintenance Districts will be created for those areas of public street median, parkway and open space which are proposed to be maintained at a level over and above City of San Diego standards.

**8. Brush Management Landscape**

Brush management landscape shall conform to the requirements of the Citywide Landscape Regulations SDMC 142.040, Appendix 2A of the Fire Code. The Brush Management Program contained in these Guidelines list a palette of plant materials suitable for installation as a fuel modification zone.

Compliance with these guidelines and requirements of the Brush Management Program shall not be construed as a guarantee against any damage, destruction, or loss of property caused by brush fires.

**B. OPEN SPACE SYSTEM**

The open space system for Black Mountain Ranch focuses upon a preserved and enhanced park reserve area. The system contains a network of on- and off-site interconnected plant and wildlife habitat areas, pedestrian and equestrian trails, biking trails, scenic overlooks and passive picnicking areas. The components of the open space system include native, naturalized and riparian areas.

In order to minimize impacts to sensitive lands and promote the objectives of the City of San Diego Multiple Species Conservation Program, direct access to public open space is prohibited from individual residential lots. Access will be limited to controlled locations.

**1. Habitat Areas**

An enhanced willow scrub and marsh habitat corridor that is 400-feet-wide will be developed along the existing Lusardi Creek. It will function primarily as a wildlife habitat. **Table 2** contains the palette of plant materials to be used in the revegetation effort.

Areas of existing coastal sage habitat and other native habitat types, within the open space system will be preserved and revegetated where disturbed by project development activities. **Table 2** contains the palette of plant materials to be used in the coastal sage revegetation effort. The Brush Management Program and the Citywide Landscape Regulations set requirements for the revegetation of brush management lots in a manner compatible with these habitat areas.

## **2. Trail Systems**

A system of pedestrian, bicycle, and equestrian trails will be constructed by Black Mountain Ranch developers, primarily on existing trails and roadbeds within the open space areas to be dedicated to the City of San Diego. The goal for these trails is both to provide circulation within the development and link the San Dieguito River Valley and Black Mountain Park.

## **C. PARKS/RECREATION SYSTEM**

Parks and recreation facilities for residents of Black Mountain Ranch are intended to provide both active and passive recreational opportunities. All park facilities are categorized as Ornamental Areas, although it is expected that portions of the parks will be treated as Drought Tolerant Areas.

### **1. Community Parks**

A single 40-acre community site has been set aside which includes a 30-acre developed area for active recreation/sports facilities. The park will provide access to the regional open space system serving essentially as a trailhead or staging area. A specific development program will be prepared by the City of San Diego Parks and Recreation department and neighboring community recreation advocates.

### **2. Parks and Schools**

Two public neighborhood parks of five acres each will be developed adjacent to public elementary schools for Black Mountain Ranch. These parks will provide active playgrounds and tot lots. Specific park facility design will be coordinated with the staffs of the City Parks and Recreation department and the Poway Unified School District.

## II. BRUSH MANAGEMENT PROGRAM

The Brush Management Program described in this section implements the City of San Diego Brush Management Plan as defined in the Citywide Landscape Regulations SDMC 142.0412, which establishes a means of providing fire safety in the landscape.

The Brush Management Program is designed to provide a transition between what has been determined to be either moderately or highly flammable vegetation areas and structures. To do so, management zones have been established to gradually reduce the amount of flammable fuel while maintaining plant coverage for soil protection and minimize visual and biological impacts.

- Zone 1 consists of plantings adjacent to structures. While these plantings typically consists of irrigated, ornamental non-native species, native plants may also be used. Native plants should be able to survive without summer water.
- Zone 2 can be implemented in a variety of ways, the simplest being the selective thinning and pruning of the native plants. Long-term ongoing thinning cost may be reduced by the introduction of low-growing fire retardant shrubs and groundcovers that are visually and horticulturally compatible with the native vegetation. Zone 2 plants can also be established in disturbed areas that have been cleared of native vegetation by replanting appropriate native plant species in combination with appropriate non-native plant materials.

Maintenance of brush management lots will be the responsibility of a Property Owners Association. Hand clearing or selective thinning of flammable species and dead wood should be used for any fire control measures required within the brush management lots encompassing Zone 2. Sensitive plant species shall be identified within the brush management areas and open space areas and their removal shall be restricted. The preferred method of removal is with the use of hand tools, axes and chain saws for cutting back, trimming, thinning and pruning. The existing root systems of the natural brush are critical in the control of erosion. This method preserves the root systems of established plants and reduces the amount of destruction to the habitat.

Maintenance of the brush management lots shall include the removal of invasive species.

The following are the sensitive plant species that have been observed or have the potential to occur within the brush management plan area:

### **Species**

Acanthomintha ilicifolia - San Diego thornmint  
Adolphia californica - California adolphia  
Artemisia palmeri - San Diego sagewort  
Baccharis vanessae - Encinitas coyote bush  
Brodiaea orcuttii - Orcutt's brodiaea  
Cenanothus verrucosus - Wart-stemmed ceanothus  
Chorizanthe orcuttiana - Orcutt's spine flower  
Comarostaphylis diversifolia ssp. diversifolia - Summer holly  
Corethrogyne filaginifolia var. incana - San Diego sand aster  
Dichondra occidentalis - Western dichondra  
Dudleya variegata - Variegated dudleya  
Ferocactus viridescens - Coast barrel cactus  
Harpagonella palmeri var palmeri - Palmer's grappling hook  
Iva hayesiana - San Diego marsh elder  
Juncus acutus var. sphaerocarpus - Spiny rush  
Monardella linoides ssp. viminea - Willowy monardella  
Muilla clevelandii - San Diego goldenstar  
Ophioglossum lusitanicum ssp. californicum - California adder's tongue fern  
Selaginella cinerascens - Ashy spike-moss

When revegetation is proposed within the brush management plan area, the following plant species meeting the brush management criteria set forth in the Citywide Landscape Regulations:

Atriplex canescens - Fourwing saltbush  
Ceanothus griseus 'Horizontalis' - Descanso rockrose  
Cistus crispus - Carmel creeper  
Eriophyllum confertiflorum - Golden yarrow  
Eschscholzia californica - California poppy  
Heteromeles arbutifolia - Toyon  
Isomeris arborea - Bladderpod  
Lasthenia chrysostoma - Common goldfields  
Lupinus bicolor - Annual lupines  
Lotus scoparius - Deerweed  
Mimulus puniceus - Red bush monkey flower  
Plantago insularis - Plantain  
Rhus integrifolia - Lemonade berry  
Stipa pulchra - Purple stipa

Compliance with these guidelines shall not be construed as a guarantee against any damage, destruction, or loss of property that may be caused by brush fire.

---

# **APPENDIX C**

## Mitigation Monitoring and Reporting Program

# MITIGATION MONITORING AND REPORTING PROGRAM

---

## MITIGATION MONITORING AND REPORTING PROGRAM BLACK MOUNTAIN RANCH (SUBAREA I) SUBAREA PLAN IN THE NORTH CITY FUTURE URBANIZING AREA LDR NO. 96-7902

The California Environmental Quality Act (CEQA), Section 21081.6, requires that a mitigation monitoring and reporting program be adopted upon certification of an environmental impact report (EIR) in order to ensure that the mitigation measures are implemented. The mitigation monitoring and reporting program specifies what the mitigation is, the entity responsible for monitoring the program, and when in the process it should be accomplished.

A mitigation monitoring and reporting program was adopted with the approval of the Black Mountain II VTM/PRD, which is hereby incorporated by reference. The mitigation monitoring and reporting program for Black Mountain Ranch Subarea I is under the jurisdiction of the City of San Diego and other agencies as specified below. The following is a description of the mitigation monitoring and reporting program to be completed for the project. Tables and figures from the EIR for the project are referenced in the following text.

### 1. LAND USE

- a. Impact:** The Subarea I Plan has been prepared consistent with the requirements of Council Policy 600-40 and, overall, is consistent with RPO with respect to encroachments to steep slopes, biology, and cultural resources. There are wetlands and floodplain included within development areas that could be encroached upon for access and utilities. As such, this would represent a significant land use impact.
- a. Mitigation:** Future site-specific development will need to include the 100-foot-wide wetland buffers, demonstrate that proposed encroachments into wetlands for road and utility crossings are unavoidable, and provide mitigation for the encroachments to wetlands consistent with the City Biology Guidelines. State and federal permits must be approved by U.S. Army Corps of Engineers and California Department of Fish and Game if encroachment to wetlands occurs in future development.
- b. Impact:** Future development in the northeast perimeter property has the potential to conflict with the viewshed in the SDRP La Jolla Valley landscape unit. Adoption of Community Design Guidelines in the Subarea I Plan would serve to minimize the potential conflicts.
- b. Mitigation:** Residential development adjacent to the FPA in the northeast perimeter property could impact the viewshed from the FPA. This potential impact could be mitigated by implementing Community Design Guidelines to reduce the visual and physical encroachment of development into the FPA. Landscape guidelines would limit the kinds of ornamental trees and shrubs planted around residences and would require natural transition areas within rear yards of lots fronting open space.

Community Design Guidelines are included in the Subarea I Plan which apply to the northeast perimeter property to minimize these potential impacts. Guidelines addressing these issues shall be included in subsequent tentative maps and planned development permits submitted for future site specific development. Specific compatibility would be assessed in subsequent environmental review before the future development could take place.

## 2. TRANSPORTATION/TRAFFIC CIRCULATION

**Impact:** The Subarea I project would contribute to significant direct impacts to levels of service on the road and freeway segments identified on **Table 4B-14**. Also, the Subarea I project would incrementally contribute to significant cumulative impacts to levels of service on the roadway segments identified on **Table 4B-15**.

**Mitigation:** The transportation improvements associated with the Black Mountain Ranch II VTM and each development phase of Subarea I are presented on **Table 4B-5**. These improvements shall be assured to the satisfaction of the City Engineer prior to development within each phase.

The Subarea I phased transportation improvements and range of mitigation measures were derived from a subregional traffic model that made an equivalent assumption for development elsewhere. These assumptions were based on the density and rate of buildout assumed for the NCFUA, as well as for approved and reasonably foreseeable projects proposed for the adjoining county areas through the year 2015. Because this range of possible mitigation measures is based on forecasts and assumptions of future traffic from a variety of proposed projects, and due to the fact that this EIR contains a subarea plan-level of analysis, the final mitigation program necessarily will be further refined in connection with CEQA review of future tentative maps for specific development projects within the subarea. As a result, the improvements and phasing may be modified and different mitigation measures or phasing may be substituted to the satisfaction of the City Engineer, so long as the mitigation measures to be implemented are determined to meet or exceed the level of mitigation provided for in this traffic analysis.

## 3. BIOLOGICAL RESOURCES

### **Impact:**

- The direct loss of 16.7 acres of Tier II Diegan coastal sage scrub, 12.9 acres of Tier IIIA southern mixed chaparral (including recovering disturbed chaparral), and 0.3-acre of willow scrub on the southeast and southern parcels; and 1.4 acres of disturbed wetlands, on the southwest property would be significant direct impacts. The additional loss of 176.8 acres of Tier IIIB non-native grassland within all the perimeter properties when added to the ongoing loss of open grassland in the region would be a significant direct and cumulative impact. Raptor foraging habitat and prey species would be adversely affected by grassland loss which contributes to the significant cumulative loss regionally. Loss of wetlands is also a cumulative significant impact.

- Impacts to three pairs of coastal California gnatcatcher through reduction in habitat (one each on the northeast, southeast and south properties) would be a direct significant impact. Other indirect impacts to wildlife from construction noise, artificial lighting and other habitat degradation would also be considered potentially significant.
- Impacts to the orange-throated whiptail, San Diego horned lizard, southern California rufous-crowned sparrow, grasshopper sparrow, loggerhead shrike, black-shouldered kite and blue grosbeak, which inhabit the perimeter parcels would also be a significant direct impact. The impacts to western dichondra, coast barrel cactus and dudleya (northeast), and ashy spike-moss (southeast) sensitive plant species would also be significant.
- Edge effects (indirect impacts caused by predation by pets, lighting, invasive plants, and noise during construction) from residential development adjoining the MHPA are potentially significant.

**Mitigation:**

Upland Vegetation and Sensitive Species. Mitigation for significant direct and indirect impacts to upland resources would be mitigated by implementation of mitigation consistent with the City's MSCP Subarea implementing regulations and Biology Guidelines. Mitigation for impacts to Tier II coastal sage scrub, Tier IIIA mixed chaparral, and Tier IIIB non-native grasslands would be provided by acquisition and conservation of Tiers I, II, or III habitats at the time that development plans are submitted. The City's 1997 Biology Guidelines require replacement ratios of 1:1 for Diegan coastal sage scrub, and 0.5:1 for southern mixed chaparral, and non-native grassland for impacts occurring outside the MHPA if the mitigation lands are dedicated within the MHPA. If the impacts are outside the MHPA, the ratios are lowered to 0.5:1 for mixed chaparral and non-native grasslands. The perimeter properties would impact 16.7 acres of Tier II sage scrub and 13.8 acres of Tier IIIA southern mixed chaparral outside the MHPA. Future development would also impact approximately 176.8 acres of Tier IIIB non-native grassland outside the MHPA. This would require the preservation of 112 acres of habitat within the MHPA to be conserved on-site, acquired off-site, and located within the MHPA or revegetated (16.7 acres of Tier II coastal sage scrub, 6.9 acres of Tier IIIA southern mixed chaparral, and 88.4 acres of Tier IIIB non-native grasslands). The conserved habitat must be shown to be viable and assured prior to any grading or displacement of existing habitat. Impacts to non-native grasslands are cumulative significant and unmitigated.

The revegetation could be targeted for areas adjacent to occupied habitat patches to expand their size and to extend the area of habitat to connect the San Dieguito River and Black Mountain Park. The area of existing and revegetated habitat would be large enough to reasonably ensure occupation and continued viability of breeding coastal California gnatcatchers.

Riparian Vegetation. Impacts to wetlands and riparian habitat within the Black Mountain Ranch II VTM/PRD are being mitigated through a revegetation program approved by the USACE, CDFG, and City of San Diego. The further loss of 1.7 acres of wetlands (0.3 acre of willow scrub and 1.4 acres of disturbed tamarisk scrub), located in the southeast and southwest perimeter properties, and 0.11 acre of willow scrub, 0.92 acre of mule fat scrub, and 0.36 acre of freshwater marsh would be potentially mitigated by extension of the approved revegetation program of riparian habitat along Lusardi Creek in La Jolla Valley. Wetland habitat (willow scrub and freshwater marsh) impacted by the development of the property would be replaced at a 3:1 ratio (2.3 acre) and revegetated or enhanced with riparian taxa. Tamarisk scrub and mule fat scrub would be mitigated at a ratio of 2:1 (4.6 acres). The revegetation would take place within an average 400-footwide riparian corridor along Lusardi Creek. The riparian plantings would include marsh reeds (*Juncus* sp., *Scirpus* sp., *Typha* sp. and *Anemopsis* sp.), willow scrub trees and shrubs (*Salix* sp., *Baccharis* sp.; and [*va hayesiana*]), and riparian woodland trees (*Platanus racemosa*, *Populus fremontii* and *Quercus agrifolia*). The revegetation plan would restore and enhance riparian areas that had been disturbed and denuded by prior agricultural use. Cumulative impacts remain significant and unmitigated.

### **Other Measures to Minimize Impacts**

Covered Species Special Conditions. Two MSCP-covered plant species occur on the northeast perimeter property: variegated dudleya (*Dudleya variegata*) and coast barrel cactus (*Ferocactus viridescens*) for which specific management directives apply. These include minimization of edge effects (all), minimization of recreational use impacts (dudleya), and prohibiting collection and fire management (coast barrel cactus). The MHPA boundary has been designed to minimize edge effects (species are within the open space area within the subarea) and brush management will be incorporated into future development envelopes. These measures would be shown in future development proposals for the northeast property development area of the northern village.

One reptile species, the San Diego horned lizard (*Phrynosoma coronatum blainvillii*), was observed on the southwest perimeter properties. Management actions directed to this species include maintaining native ant species for forage, discouraging frequent irrigation within and around the perimeter of the MHPA, and minimizing edge effects. Restricting the planting at the edge of the MHPA to drought-tolerant plants would be incorporated into landscape and design guidelines for residential development adjoining the MHPA in future site-specific development proposals consistent with Subarea I Plan guidelines. The orange-throated whiptail was observed in the northeast perimeter property. Special management conditions are directed at the minimization of edge effects.

Two species of birds covered by the MSCP were observed on the perimeter properties: California gnatcatcher (all) and southern California rufous-crowned sparrow (south, southeast, and southwest). Management directives apply to the rufous-crowned sparrow include maintenance of dynamic processes, such as fire, to perpetuate open phases of coastal sage scrub with herbaceous components. The MSCP guidelines for California gnatcatcher provide area-specific measures to reduce edge effects and minimize

disturbance during the nesting period, fire protection measures to reduce the potential for habitat degradation due to unplanned fires, and management measures to maintain or improve habitat quality including vegetation structure. Land use adjacency measures are included in the Subarea I Plan and would be incorporated into future development proposals (e.g., no clearing of occupied habitat within the City's MHPA and the county's Biological Reserve Core Areas may occur between March 1 and August 15).

Indirect effects can be minimized through restricting construction activities adjacent to habitat areas during breeding seasons, incorporating appropriate land use adjacency guidelines, and requiring controls for erosion and sedimentation. The following measures would be incorporated in future development proposals:

1. Any artificial lighting associated with development, including parking lots adjacent to the MHPA, would be selectively placed, shielded, and directed away from the MHPA.
2. Future maps and grading plans for development would specify that grading would not occur beyond the limits of an approved grading envelope. Grading plans would indicate all natural open space areas as off-limits to equipment or other disturbance. The grading plans would require that a preconstruction meeting be held to describe to all construction personnel the required avoidance techniques and areas to be avoided and that prior to any work, the construction supervisor and the biologist together would mark the grading limits to ensure against impacts to the MHPA. The grading plans would also specify that a biologist be on-site to monitor grading activity adjacent to biologically sensitive lands.
3. Cut and fill slopes adjacent to natural open space and some of the disturbed habitats within the MHPA would be revegetated to reestablish native habitat types. Such slopes would be revegetated as quickly as possible to prevent erosion of graded areas and resultant siltation elsewhere. Under no circumstances would graded cut or fill slopes remain denuded during the rainy season. The requirements for revegetation would be shown on the tentative map and grading plans.
4. Indirect impacts to the willow riparian scrub would be avoided by the establishment of a buffer zone of at least 100 feet between the outer edge of the willow riparian canopy and any development. The buffer zones may be less than 100 feet if it can be shown that the adjacent use would not impact the quality of the habitat. The buffer zones would be shown as open space on the tentative map, final map, and grading plans.
5. Prior to the issuance of a grading permit for the project, the applicant would have received a federal Clean Water Act Section 404 permit and an agreement under Section 1600 of the Fish and Game Code which are required for alterations to streambeds and for filling in the riparian scrub, mule fat scrub, disturbed nicotianaltamarisk scrub, and freshwater marsh wetlands vegetation. The applicant would demonstrate compliance with mitigation conditions to the satisfaction of the permitting agencies.

6. The applicant would provide a notice to each buyer prior to sale that risks to pets exist due to the presence of coyotes, bobcats and other natural predators which inhabit the natural open space in the area.
7. Prior to the construction of hiking or equestrian trails or bike paths not constructed within road rights-of-way, a qualified biologist would walk the proposed trail alignments and delineate an acceptable route that avoids or minimizes encroachments into sensitive habitats and avoids impacts to sensitive plant species. The biologist would delineate the trail route on maps and submit them with recommendations for construction methods and areas that should be avoided to the Manager of the Park and Recreation Department and the Deputy Director of the MSCP section.
8. Brush management and fire control measures would be limited to City requirements and excess habitat loss would be avoided. Brush management shall be the responsibility of the homeowners association and would be conducted in strict conformance with the brush management requirements of the landscape plan. Hand clearing or selective thinning of flammable species and dead wood should be used for any fire control measures required within the brush management area. Sensitive plant species would be identified in the brush management plan and their removal restricted. As a part of the tentative map submittal, the brush management plan would be reviewed and approved by the City Fire Department and the Environmental Review Manager of the Land Development Review Division.
9. Development along the boundary of the MHPA would include provisions for barrier walls, fencing, plantings, or other means to direct public access and restrict pet encroachment into the MHPA as identified in the Subarea I Plan.
10. Grading or construction for future development adjacent to the MHPA during the nesting season would include temporary noise barriers or other measures to minimize noise impacts to sensitive species.

Cumulative significant unmitigated impacts to wetlands and non-native grasslands can only be avoided through adoption of the No Project Alternative, as discussed in the **Community Design Element**.

#### **4. HYDROLOGY**

- a. **Impact:** The increase in runoff due to the introduction of streets, roads and other hardscape surfaces could result in adverse impacts to drainage to the west, but can be mitigated to below a level of significance through design of a drainage system and incorporation of sediment basins and flow control.
- a. **Mitigation:** As mitigation for the increased runoff, water surface elevations as determined by a HEC-2 analysis shall be used to provide design specifications for site drainage to protect individual sites and adjacent properties from future development within Subarea I. Interceptor ditches and detention/desilting basins shall be provided to allow water to accumulate and be released back to the natural watercourse at a rate similar to the existing conditions. Sediment basins shall be placed in swales to protect

downstream properties. Detailed design of any desilting basins recommended for the southeast perimeter property and BMPs (see below) shall be required as conditions of subsequent tentative maps for development within these areas.

- b. Impact:** The implementation of the Subarea I Plan has the potential to significantly impact water quality (both directly and cumulatively) in the San Dieguito River and Lagoon. Such impact may be associated with increased erosion, siltation, sedimentation and downstream flooding from project-related activities.
- b. Mitigation:** The following measures would reduce levels of erosion sedimentation and runoff during construction activities. The Plan shall require that these or equivalent measures be conditions of future tentative maps in Subarea I.
  1. Hydroseeding and landscaping of any cut/fill slopes disturbed or built during the construction phase of this project with appropriate ground cover vegetation shall be performed within 30 days of completion of grading activities.
  2. Areas of native vegetation or adjoining slopes to be avoided during grading activities shall be delineated to minimize disturbance to existing vegetation and slopes.
  3. Artificial ground cover, hay bales, and catch basins to retard the rate of runoff from manufactured slopes shall be installed if grading occurs during wet weather season, November 1 through April 1.
  4. Fine particulates in geologic materials used to construct the surficial layers of manufactured slopes shall not be specified unless a suitable alternative is not available.
  5. Temporary sedimentation and desilting basins between graded areas and streams shall be provided during grading.

Development in the southeast perimeter property may require detailed design and construction of additional desilting/detention basins not already approved under the Black Mountain Ranch II VTM. These basins would use extended detention methods to maximize their usefulness in controlling erosion and sedimentation impacts. The basins shall be constructed and maintained by the developer during construction. Once the project is completed, responsibility for the maintenance of these basins would be transferred to the homeowners association. The construction of these basins would mitigate the increased silt direct impacts to below a level of significance. Cumulative impacts to San Dieguito Lagoon, however, would still be considered an incremental and significant impact. This significant impact is unmitigable and may only be avoided by adoption of the No Project alternative.

The requirements for sedimentation basins and the use of Best Management Practices shall be noted on future tentative maps. It shall also be a condition of future tentative maps that permanent basins and all other drainage facilities shall be constructed prior to issuance of building permits.

The following is a description of some Best Management Practices which would be incorporated into the design of the detention/desilting basins.

Desilting Basin. Desilting basins act as traps for site-generated sediments, thereby reducing the negative impacts from erosion and sediment transport. A flow control device located in the basin would control the outflow from the project site and allow for ponding in the basin. The ponded water would contain sediments and dissolved pollutants that have adhered to the soil particles. These particles would be removed through the sedimentation and siltation process, accumulating at the bottom of the basin. The sediments can then be removed and disposed of properly on a periodic basis. The desilting basins would be permanent structures to ensure that sediment would not be transported from the site. The basins would be cleaned and invasive vegetation removed periodically.

Extended Detention. To achieve efficient pollutant removal rates from an urbanized project site, the use of permanent extended detention facilities can be employed. The detention facility provides temporary storage for increased runoff from the project site due to urbanization; the storage facility is usually a dry pond/basin system. Site-generated pollutants can consist of oil and grease, biological nutrients, oxygen-demanding organics, toxic organics and metals. Pollutant removal is achieved through the extended detention method, in which sediments and chemical constituents are allowed to accumulate at the bottom of the basin through the sedimentation process. Extended detention facilitates the adequate removal of particulate pollutants. To enhance the removal of soluble pollutants, marsh planting can be provided in the bottom of the basin. Cleaning and removal of invasive vegetation would occur on a periodic basis.

The following is a description of some Best Management Practices which, with the two detention basins, shall be conditions of future approvals (e.g., PRDs and landscape plans) for development within Subarea I:

Filter Strips. Filter strips can be utilized to enhance pollutant removal from the site. Filter strips are planted with erosion-resistant grasses or plant species and are designed to spread flows from the site into a wide area where overland sheet-flow conditions can occur. The vegetation within the strips slows the flows, causing heavier particulates to fallout of suspension, and also acts as a biological filter when direct absorption of dissolved pollutants occurs. The use of vegetation to reduce the flow velocities also allows for enhanced soil infiltration to take place. The soil also acts as a filter; dissolved pollutants are absorbed onto the soil particles. This is an important method for removal of dissolved heavy metals and phosphorus (fertilizers). Biological activity in the soil can also metabolize toxic organic contaminants (pesticides).

Source Control. An integral part of achieving adequate pollutant removal from collected storm water is the implementation of source control practices that reduce the amount of contaminants of the ground surface that can come in direct contact with surface flows. These practices include:

1. Cover outdoor storage facilities that contain potential contaminants.
2. Encourage proper use and disposal of materials including fertilizers, pesticides, and herbicides and including appropriate methods, rates, and frequency of application of these chemicals.
3. Encourage alternative methods for controlling weeds and insects using physical, biological, and lower-toxicity methods.
4. Recycle chemicals to the extent possible, and dispose of materials in a safe and proper manner.

The following measure was incorporated by reference from the Black Mountain Ranch II VTM/PRD EIR:

- Monitoring for TDS and nutrient levels shall be required on a regular basis by the RWQCB. If the levels exceed waste discharge requirements for the use of reclaimed water in the basin, the discharge must cease until proper treatment has been accomplished or the reclaimed water has been diluted to meet the requirements.

## 5. LANDFORM ALTERATION/VISUAL QUALITY

- a. Impact:** Future extensions of Camino Ruiz to the north, Camino del Norte and Carmel Valley Road east of Black Mountain Road would result in cut and fill slopes in excess of 30 feet in height and would exceed City grading thresholds. Due to the need to cross La Zanja Canyon for Camino Ruiz and Carmel Valley Road and, in the future, Lusardi Creek/La Jolla Valley to extend Camino Ruiz northward, and the otherwise varying terrain across the site, there would be no alignment within the project which would avoid or substantially lessen the landform alteration impacts while maintaining the regional circulation objectives. This would be a significant impact.

The amount of grading for future development areas cannot be fully quantified at this time, as lot grading would be part of the specific design concepts for the individual areas. None of the areas except the finger ridges fronting La Jolla Valley contain steep slopes or other major topographic features. The potential landform impacts for the areas other than the finger ridges are not expected to be significant. Grading of the finger ridges may result in significant adverse effects as identified in the 1995 Black Mountain Ranch II VTM/PRD EIR.

The amount and severity of grading for development proposed for the four perimeter ownership areas cannot be quantified at this time, as lot grading would be part of the specific design concepts for the individual areas. In general, grading of the northeast and southeast perimeter properties may result in significant adverse landform impacts.

The potential landform impacts from grading would be evaluated in future environmental review of development plans for these areas.

- a. Mitigation:** The following measures would be incorporated into approvals to partially mitigate direct impacts for any future development within Subarea I.

Individual lot development for Subarea I would include guidelines that specifically address grading techniques to minimize large manufactured or major alterations to underlying terrain. The guidelines would place limitations on the severity of slopes and require blending and contouring to natural adjacent slopes with appropriate landscaping. Pertinent requirements would include:

1. Design structures to fit the natural landform.
2. Locate architectural and site elements at different elevations to avoid grading one large pad.
3. Utilize stepped building foundations or retaining structures as an alternative to conventional cut and fill methods.
4. Encourage site development that avoids steeply sloping terrain.
5. Locate site access roads and driveways to follow natural contours.
6. Encourage daylight cut situations where pads interface with natural open space.
7. Blend transitional manufactured slopes with the natural slope.
8. Balance earthwork on the individual lot when possible to avoid soil import or export.
9. Do not grade outside individual property lines.
10. Employ blending and rounding techniques where manufactured slopes meet natural ground.
11. Vary slope gradient and width and contour edges to achieve a more natural appearance to slope banks.
12. Limit the height and gradient of slopes fronting open space to ten feet at 2:1 and to no more than 30 feet in any case.

Implementation of the grading techniques would be shown on the tentative maps and would be assured through the approval of the final grading plans. Those slopes, which are visible from major roadways and public viewing areas, would vary slope gradient, width and contour edges, and use blending and rounding to blend to natural slopes. The applicant would clearly indicate on the grading plans special design requirements for slopes that are to be graded. Grading for major slopes would minimize encroachment into sensitive vegetation. A note would be included on the grading plans for the tentative and final grading plans for all future development indicating that the grading techniques are environmental mitigation measures.

Grading for major roads and other common facilities and areas must include provisions for erosion control and hydroseeding. Landscape plantings for native shrubs or exotics as shown on the overall landscape plans must be shown on the grading plans. The landscape plans would be implemented in phases coincident with development phases.

Prior to the issuance of grading permits, the Development Coordinator would review the grading and landscape plans to ensure that sensitive grading techniques are being utilized and that manufactured slopes are landscaped in conformance with the conceptual landscape plan. Areas shown as open space would be flagged in the field and construction crews would be restricted from these areas. The applicant would retain a soils engineer to monitor the grading and construction and a landscape architect to monitor revegetation of the project. Landscaping would be in place along the developed roadways and development areas prior to issuance of building permits for each area. The soils engineer and landscape architect would submit in writing to the City Engineer and provide certification that the project has complied with the required mitigation measures on the grading plans. Only after the Development Services Manager and City Engineer approve the grading would recommendations be made to the City Council for the release of the subdivision bond.

Direct impacts remain significant, however. The No Project and Development Without a Phase Shift alternatives would reduce the impacts, but not to a level below significance.

- b. Impact:** The creation of manufactured slopes greater than 30 feet in height associated with grading for circulation element roads would cause a significant visual impact to the viewshed from both Black Mountain Park and the SDRP.

Future Specific Plan development at Santa Fe Valley may be adversely impacted by the northern village development.

Development of the resort hotel may result in significant visual impacts but would be made compatible with incorporation of the mitigation measures listed below.

Potential impacts to views from the FPA to future development around La Jolla Valley including the northeast perimeter property and impacts to views from Black Mountain Park of the future residential development within the southeast perimeter properties may be significant.

- b. Mitigation:** Visual impacts associated with the cut and fill slopes from the roadways would be partially mitigated by sensitive grading techniques (contouring, varying slope face to present more natural appearance, and minimizing slope height and aspect) landscaping and revegetation, which were made conditions of future grading permits as part of the Black Mountain Ranch II VTM/PRD EIR. These measures or similar measures to minimize visual impacts from manufactured slopes will be implemented once Subarea I development is approved.

In addition, design guidelines, such as residential lot grading, siting of structures, architectural styles, setbacks and exterior use areas, walls and fences, exterior lighting and landscape, would be included to maintain a consistent community character throughout Subarea I. Development along the edge of any open space visible from public open space areas, parks, trails, and major roads shall include these or similar design standards that address visual character.

Direct impacts to views from the FPA to residential areas within the subarea would be partially mitigated by future conditions of tentative maps and grading permits. The guidelines would include measures to restrict the size and aspect of residential lot grading, provide adequate setbacks and visually compatible landscaping around residential structures so as not to be visible from the creek bed in the valley floor, and require the use of structural design guidelines and landscape plans. Lots bordering on the rim of La Jolla Valley would be subject to guidelines which encompass building setbacks, a naturalized planting transition zone from the edge of the open space, grading restrictions to minimize heights of graded pads or severity of graded slopes fronting to open space, landscape palette, and exterior architectural styles, colors, materials, and roofing guidelines.

Architectural and landscape design and treatment would mitigate potential significant visual impacts from development of the resort hotel.

Potential impacts to the Santa Fe Valley from development of the northern village would be mitigated through siting lower-density development along the northern edge of the village area, through architectural design and landscaping.

Guidelines compatible with existing surrounding development would be made a requirement of future tentative maps and other development approvals.

Direct visual impacts associated with the cut and fill slopes from the roadways would not be fully mitigated.

## 6. AIR QUALITY

**Impact:** Development of Subarea I would create significant direct and indirect air quality impacts, and contribute to the region's current inability to meet air quality standards, thus adding incrementally to a significant cumulative impact.

**Mitigation:** In order to reduce construction-related air quality impacts, if feasible, the area being graded at any one time would be minimized. Also, if possible, low pollutant-emitting construction equipment would be used and the equipment would be equipped with prechamber diesel engines or their equivalent. Electrical construction equipment would be used if feasible.

In addition, dust control during construction and grading operations would be regulated in accordance with the rules of the San Diego APCD. The following measures would reduce fugitive dust impacts:

1. All unpaved construction areas would be sprinkled with water or other acceptable San Diego APCD dust control agents during dust-generating activities to reduce dust emissions. Additional watering or acceptable APCD dust control agents would be applied during dry weather or windy days until dust emissions are not visible.
2. Trucks hauling dirt and debris would be covered to reduce windblown dust and spills.
3. On dry days, dirt and debris spilled onto paved surfaces would be swept up immediately to reduce resuspension of particulate matter caused by vehicle movement. Approach routes to construction sites would be cleaned daily of construction-related dirt in dry weather.
4. On-site stockpiles of excavated material would be covered or watered.

To reduce construction-related vehicle emissions, ride share opportunities would be encouraged and construction vehicle access would be limited to roads determined in a temporary traffic construction management plan. In addition, construction staging areas would be as far away from existing or completed residences as possible. Construction activities would also be limited to the hours of 7 A.M. to 7 P.M. Monday through Saturday under San Diego's Noise Ordinance Section 36.410 for operating construction equipment.

Incorporation of these measures, combined with the fact that construction is a one-time impact, would reduce potentially significant air quality impacts to below a level of significance.

Measures to reduce vehicle miles traveled, such as provision of bike lanes, sidewalks, and transit facilities, which have been discussed above, would be incorporated into the proposed development of the remaining parts of Subarea I. No additional mitigation measures for long-term direct and cumulatively significant air quality impacts is available other than compliance with the goals and objectives of the RAQS.

## 7. GEOLOGY AND SOILS

- a. **Impact:** There are no significant soil or geologic conditions which were observed or known to exist within Subarea I which would preclude implementation of the Plan. However, potentially significant geologic conditions exist which would require mitigation as part of any future tentative maps.
- a. **Mitigation:** Implementation of the conclusions and recommendations in the geotechnical report prepared for Black Mountain Ranch (Geocon Incorporated 1991) would mitigate the potentially significant effects within its future development areas to below a level of significance. These measures are summarized below. Implementation of these measures shall be made conditions of approval for future tentative maps within Subarea I.

### General Measures

1. The presence of landslides, weak claystones, uncompacted fill soils and potentially compressible colluvial and alluvial deposits require special consideration where development is planned. If weak claystones or landslides are present in areas proposed to be graded, stabilization measures in the form of buttresses or stability fills shall likely be required.
2. Very heavy ripping may be necessary within areas underlain by the Santiago Peak Volcanics, Lusardi Formation and gabbro. Deep cuts in the Santiago Peak Volcanics or gabbroic rocks shall require blasting. Special handling of the excavated rock and placement of oversized materials would also be anticipated.
3. Highly expansive soils may be encountered within the Delmar, Mission Valley, and Friars formations and some of the topsoils. It is anticipated, however, that there would be sufficient low expansive soils available on the site to mitigate the adverse impact of expansive soils where encountered.
4. Compressible alluvium and colluvium present along canyon alignments and on the lower flanks of the ridges shall require at least partial removal and recompaction where settlement sensitive improvements are planned.
5. Perched groundwater is anticipated to be present within the low-lying alluvial areas. Hence, remedial measures in the form of subdrains shall be required where filling of the drainage courses is planned.

### Grading

1. For preliminary design purposes, it is recommended that proposed cut and fill slopes be planned no steeper than 2:1 (horizontal to vertical). Safe allowable slope heights shall generally be limited by the shear strength characteristics of the particular soil or rock conditions present. It is recommended that areas where high cut slopes are planned be investigated in detail to evaluate the potential impact of the local geology on the stability of the slopes.
2. Due to the increased grading costs associated with rock blasting and handling, it is recommended that planned excavations and underground utility lines for building pads shall be kept to a minimum within those portions of the site underlain by Santiago Peak Volcanics and/or gabbroic formations.

### Drainage and Maintenance

1. Providing and maintaining proper surface drainage is imperative to assure soil stability and reduce erosion. All graded pads shall have drainage swales which direct storm or irrigation runoff away from structures or the top of slopes to control drainage facilities.
2. No storm or irrigation water shall be allowed to discharge over the top of cut or fill slopes.

### Consultation and Plan Review

Prior to the finalization of the grading plans for other future tentative maps within the perimeter properties, detailed soil and geologic investigations addressing the proposed development shall be performed. The Development Services Department shall ensure that measures recommended in those reports shall be made conditions of the tentative maps and grading plans.

- b. Impact:** Without erosion control measures, there is a potentially significant increased erosion impact associated with the implementation of the Plan. These impacts would be mitigated to a level below significance by incorporation of appropriate control measures, as outlined below.
  
- b. Mitigation:** The following mitigation measures shall be carried forward for future tentative map approvals within Subarea I. These measures shall reduce the potential erosion impacts from grading and brush management to below a level of significance. These measures shall be made a condition of approval for future development within Subarea I.
  1. Fill areas or areas stripped of native vegetation shall require special consideration, such as desilting basins, improved surface drainage, and early planting of erosion resistant ground covers to reduce the erosion potential.
  2. Grading plans shall incorporate short-term erosion control measures, including planting on disturbed and manufactured slopes, grading to facilitate drainage away from the slope faces, use of hay bales and swales at the top of slopes, and construction of desilting basins, to the satisfaction of the City Engineer and the Development Services Manager. Any special grading techniques, as recommended in subsequent geotechnical investigations, shall be implemented.
  3. Catch basins shall be provided during grading.
  4. No grading shall occur between October 1 and April 30 unless an erosion control system has been made a part of grading plans to the satisfaction and approval of the City Engineer.
  5. All manufactured slopes shall be immediately revegetated or hydroseeded with erosion-resistant plant mixes and irrigated to ensure plant coverage prior to the next rainy season. In areas to be included as naturalized open space, such plantings shall be noninvasive native grasslands and shrubs and include native plant mixes preferencing the surrounding native habitat.
  6. Permanent erosion control measures, such as complete landscaping with drought tolerant, slope-stabilizing vegetation, shall be provided to the satisfaction of the City Engineer.

7. In areas near watercourses, construction sedimentation control measures, such as interim desiltation basins, gravel bags, hay bales or silt fences at the toe of slopes to prevent erosion, or punch straw or matting to stabilize graded slopes, shall be installed to prevent sloughing of materials into watercourses.
8. A brush management plan shall be prepared for subsequent tentative maps to the satisfaction of the City Fire Department and the Land Development Review Division of the Development Services Business Center.

Mitigation measures concerning grading shall be specified on grading plans for future tentative maps. The Development Services Business Center shall review the site preparation/grading and landscape plans for consistency with the above measures prior to issuance of a grading permit. Revegetation of manufactured slopes shall be inspected by a landscape architect or qualified biologist and a report submitted prior to issuance of building permits.

## 9. PALEONTOLOGY

**Impact:** Development within Subarea I would likely result in the destruction of additional significant fossiliferous areas. This would be a significant adverse impact on the region's paleontological resources. Mitigation measures presented below would reduce these adverse impacts from proposed development to below a level of significance.

**Mitigation:** Mitigation, monitoring, and reporting requirements for paleontological resources would be required as conditions of approval for future development within the northern and southern villages, the northwest and finger ridge residential clusters within Black Mountain Ranch and the northeast and southwest perimeter properties to reduce the adverse impacts of development upon paleontological resources within the remainder of Subarea I. These mitigation measures are drawn from past efforts and have proven successful in protecting paleontological resources while allowing the timely completion of developments in San Diego and elsewhere in southern California.

1. Prior to the issuance of grading permits or recordation of final maps, the applicant for future tentative maps would provide a letter verifying that a qualified paleontologist has been retained to implement the paleontological mitigation program. This letter would be presented to the Environmental Review Manager of the Land Development Review (LDR) Division. All persons involved in the paleontological monitoring of this project would be approved by EAS at least 30 days prior to the preconstruction meeting.
2. The qualified paleontologist would attend the preconstruction meeting to consult with the grading and excavation contractors. The requirement for a paleontological monitoring program would be noted on the grading plans.
3. The paleontologist or paleontological monitor would be on-site full time during the original cutting of previously undisturbed sediments of the Delmar Formation, Friars Formation, Mission Valley Formation, and Stadium Conglomerate at the project site

- to inspect for contained fossils. The frequency of inspections would depend upon the rate of excavation, the materials excavated, and the abundance of fossils. The paleontologist would work with the contractor to determine the monitoring locations and amount of time necessary to ensure adequate monitoring of the project site.
4. In the event that fossils are encountered, the paleontologist (or paleontological monitor) would have the authority to divert or temporarily halt construction activities in the area of discovery to allow recovery of fossil remains in a timely fashion. Because of the potential for recovery of small fossil remains, it may be necessary to set up a screen-washing operation on-site. At the time of discovery the paleontologist would contact LDR. The LDR must approve salvaging procedures to be performed before construction activities are allowed to resume.
  5. The qualified paleontologist would be responsible for preparation of fossils to a point of identification as defined in the City of San Diego Paleontological Guidelines, and submitting a letter of acceptance from a local qualified curation facility. Any discovered fossil sites would be recorded by the paleontologist at the San Diego Natural History Museum.
  6. Prior to the issuance of a certificate of occupancy, a monitoring results report, with appropriate graphics, summarizing the results (even if negative), analyses and conclusions of the above program would be prepared and submitted to LDR within three months following the termination of the paleontological monitoring program, and prior to the final inspection.

## 10. NOISE

**Impact:** Development in the Black Mountain Ranch future residential development areas, as well as the northern villages and the northeastern and southern perimeter properties may be exposed to future projected traffic noise levels greater than the City's standards.

Potential future construction-related noise impacts to existing residences could occur with development of the southwest perimeter property and the northern village. Impacts to sensitive wildlife within the MHPA may result from grading and construction in the southeast, northeast, and south perimeter properties. These impacts could potentially be significant short-term impacts.

Unless off-site pump stations are designed so that they achieve the noise level standards established in the City's noise ordinance, then significant impacts to surrounding residences may occur.

Noise from future flight operations at Marine Corps Air Station (MCAS) Miramar would not result in exposure to significant noise levels.

Significant noise impacts would not be generated by power lines or the potential future substation.

## **Mitigation:**

### **Traffic Noise**

Future Development Areas and Southern Perimeter Property. Future traffic noise levels may exceed City standards in portions of the future development areas within Black Mountain Ranch (northern village and residential areas) and the southern and northeastern perimeter properties. Future traffic noise levels about 50 feet from Camino del Norte, Camino Ruiz, and Carmel Valley Road are projected to be about 74 CNEL; traffic levels from Resort Street are anticipated to be 68 CNEL within 50 feet. Mitigation for exterior noise generally consists of the use of setbacks or construction of noise walls or berms. To achieve the City's exterior standard for residences, these wall or berms would have to achieve between three dB and eight dB reduction in noise. The effectiveness of a noise barrier depends on the relative locations and elevations of the noise source, barrier and receiver which are not known specifically. However, noise reductions up to ten dBA are generally attainable with noise walls or berms constructed of solid material (Bolt, Beranek, and Newman 1973:5-2). Therefore, mitigation of exterior noise levels to below City standards would be feasible. Specific design features of the barriers shall be provided when or once specific land uses are proposed, however.

To meet the interior noise standard of 45 CNEL with an outdoor environment of 74 CNEL shall require exterior to interior noise reduction of 29 dB. "Upgraded window glazing with mechanical ventilation could reduce noise by 20 to 30 dB" (City of San Diego 1991). Therefore, interior noise level standards may also be achieved for residences in the northern village and southern perimeter property using window glazing and mechanical ventilation.

Upon review of subsequent permits, additional analyses shall be completed which determine detailed locations and heights of noise barriers, locations and widths of setbacks, and exterior to interior attenuation requirements.

### **Construction-related Noise Impacts**

To reduce construction-related noise impacts, all construction activities, except in an emergency, shall be limited to the hours of 7 A.M. to 7 P.M. Monday through Saturday, which are the times allowed in San Diego's Noise Ordinance Section 36.410 for operating construction equipment.

Construction occurring adjacent to existing residences or the MHPA will be required to implement measures to reduce noise from construction equipment. These measures may include seasonal restrictions on grading during sensitive species breeding seasons, assuring that on-site construction equipment is properly equipped with mufflers or other noise-attenuating equipment or that temporary noise attenuating walls or barriers are installed. These measures would be included in future development proposals and shown on construction drawings or plans as mitigation measures.

## **Pump Station Noise**

In order to conform with the City Noise Abatement and Control Ordinance and mitigate potential impacts to below a level of significance, the pump stations shall be designed so that noise levels generated by the pump stations do not exceed 57.5 dBA  $L_{eq}$  at any residential property line.

## **MCAS Miramar**

Lessening of nuisance impacts from aircraft overflights shall be achieved with the application of the following disclosure statement:

The development (within Subarea I) is located within the Julian Departure corridor used by fixed-wing aircraft departing from Marine Corps Air Station (MCAS) Miramar. While this development is considered compatible with these air operations, occupants will occasionally experience varying degrees of noise and vibration. Miramar normally operates between 7:00 A.M. and midnight Monday through Thursday, 7:00 A.M. to 6:00 P.M. Friday, and 8:00 A.M. until 6:00 P.M. on weekends and holidays. However, as a master jet base, MCAS Miramar may operate 24 hours per day, seven days per week. Therefore, on occasions operations may be on a 24-hour basis.

## **11. PUBLIC FACILITIES AND SERVICES**

- a. Impact:** The additional elementary, middle, and high school students generated by the Subarea I plan development would contribute to the already overcrowded schools and is considered a direct and cumulatively significant impact. This impact would be reduced to below a level of significance by implementing the mitigation measures identified below.
- a. Mitigation:** Implementation of the following conditions and offers of dedication would reduce direct and cumulative school impacts from Subarea I development to below a level of significance:
  1. Collection of required fees and setting aside three school sites, and provision of partial acreage for a future high school site.
  2. Mitigation for school impacts would include implementation of a final financing agreement and phasing plan for future development in the subarea and the Poway Unified School District as identified in the school districts School Facilities Master Plan and Financing Plan for the Black Mountain Ranch Subarea, which mayor may not include participation in school facilities financing with other surrounding development projects. The Poway Unified School District proposes establishment of a Mello-Roos community facilities district; however, some other mutually acceptable means could be employed. Proof of a final financing agreement and school site purchase agreement would be required prior to City Council approval of the Plan.

- b. Impact:** The Rancho Santa Fe County Fire Department and the City of San Diego Fire Department would provide service to the project site. Sites for planned future fire stations have been reserved in the southern and northern villages. The future development areas and the perimeter properties would be approximately 2.5 miles from either an existing or planned future fire station; therefore, it is likely that acceptable response times would be met. However, a potential impact would occur if response times cannot be met.
- b. Mitigation:** City fire departments mayor may not be able to provide a first response to the subarea within six minutes. Service letters from the City of San Diego Fire Department shall be submitted when building permits are applied for. If the Fire Department cannot respond within six minutes, then building plans would include fire sprinkler systems, or other measures to the satisfaction of the Fire Department. Similar requirements would apply to all other development proposals in the subarea.
- c. Impact:** The project would affect City waste management programs and services; however, impacts could be minimized by incorporation of recycling and waste-reduction measures in project design. Services that will not be affected by the proposed project include recyclables and yard waste collection, and multifamily and commercial sectors refuse collection since these services would be provided by the private sector and not by City forces. This is considered a less than significant impact to the City's waste management services.

The amount of solid waste generated by the project represents a small increase of the solid waste disposed at Miramar Landfill. Implementation of the Plan would only incrementally shorten the life of the Miramar Landfill and would not affect the year 2006 closure schedule. These impacts are not considered significant. However, until additional landfills are sited, the approved Black Mountain Ranch II project, the Black Mountain Ranch future development areas and perimeter properties within Subarea I, and the rest of the Future Urbanizing area, as well as in other parts of the City, would contribute to a cumulative impact to solid waste disposal facilities.

- c. Mitigation:** For solid waste reduction, future single-family residential development within Subarea I shall comply with the City's recycling program. If the City curbside recycling has not been established for the project development, the homeowners association shall provide recycling containers and enter into an agreement with a recycling contractor to handle recyclable materials. The requirement for recycling bins or containers shall be included in the Design Review Guidelines for all projects and the Conditions, Covenants and Restrictions (CC&Rs). Refuse collection services for the commercial/industrial development, and multifamily residences shall be provided by the private sector, thereby not affecting City refuse collection forces. The City offers commercial/industrial waste reduction programs.

Future development will be required to develop a waste reduction/recycling plan addressing both construction phase as well as ongoing project impacts and specifying waste reduction measures that would be incorporated in project design to minimize solid waste impacts. Waste reduction and recycling measures to consider include:

1. Source reduction (on-site reuse of products);
2. Source separation and recycling (particularly during the construction phase of the project);
3. Provision of interior spaces for the storage of recyclable;
4. Landscaping with drought tolerant, preferable native species to minimize generation of yard waste; and
5. Use of recycled-content products in the construction of the proposed developments.

Additionally, the Plan must describe the location of exterior and interior storage areas for the collection of recyclables in multifamily residential and non-residential areas as required per Municipal Code Section 101.2001. The storage areas should be located in areas convenient for use by residents/tenants and service providers.

## **12. WATER CONSERVATION/DOMESTIC WATER/WASTEWATER**

**Impact:** The project's contribution to the cumulative impact associated with water supplies would be reduced to a nominal level by the mitigation measures outlined below.

**Mitigation:** The following mitigation measures would be incorporated into future development project design guidelines to address cumulative water usage concerns.

1. Limit grading in areas where no construction is proposed; thereby reducing the need for planting and irrigation of graded areas.
2. Provide lifts of low-clay content soil in landscaped areas to improve infiltration.
3. Reduce runoff potential from landscaped areas by using berming, raised planters, and drip irrigation systems.
4. Install soil moisture override systems in all common irrigation areas to avoid sprinkling when the ground is already saturated.
5. Identify in the plant materials list in the project design guidelines whether or not plants are native or naturalize easily and incorporate a list of local California sources for native plants.
6. Incorporate low-flush toilets, low-flow faucets, and timers on sprinklers (including nighttime watering) into project design.
7. Provide information regarding water conservation measures to new residents at the time of lot purchase.

The Development Coordinator would review grading, landscape, and building permits to ensure the above measures have been noted on plans.

---

# **APPENDIX D**

Transit Study

# Table of Contents

|   |      |
|---|------|
| <b>SUMMARY RECOMMENDATIONS</b> .....                        | D-1  |
| Phasing .....   | D-1  |
| Partnerships .....  | D-2  |
| Leadership .....  | D-2  |
| <b>CURRENT TRANSIT PLANS FOR THE I-15 CORRIDOR</b> .....    | D-3  |
| MTDB Route 20 .....   | D-3  |
| Commuter Express Route 850.....                             | D-3  |
| I-15 Corridor Service .....                                 | D-3  |
| <b>SERVICE OPTIONS</b> .....                                | D-4  |
| Extend Commuter Express Bus 850.....                        | D-4  |
| Establish vanpools to key employment sites .....            | D-5  |
| Establish a local shuttle service.....                      | D-5  |
| Proposed A.M./P.M. Peak and Alternative Routing.....        | D-6  |
| Establish bus rapid transit special service.....            | D-11 |
| <b>KEY ISSUES FOR BLACK MOUNTAIN RANCH</b> .....            | D-12 |
| Station location and design.....                            | D-12 |
| Potential vehicle design .....                              | D-13 |
| Partnership-building.....                                   | D-13 |
| <b>KEY ISSUES TO BE RAISED WITH THE MTDB</b> .....          | D-13 |
| Improve I-15 Rapid Transit Routing.....                     | D-13 |
| Promote a regional shuttle strategy .....                   | D-14 |
| Design vanpool/shuttle services into Eco Pass programs..... | D-14 |
| Stress importance of SR-56/I-15 transfer station.....       | D-15 |
| <b>SOURCES OF FUNDING</b> .....                             | D-15 |
| Clean Air funding .....                                     | D-15 |
| Subscription fees .....                                     | D-15 |
| One-time fees on developers or residents .....              | D-15 |
| Shared costs.....   | D-15 |
| Eco pass fees .....   | D-16 |
| Multiagency agreements.....                                 | D-16 |
| <b>ELEMENTS FOR SUCCESS</b> .....                           | D-16 |
| Service Planning .....                                      | D-16 |
| Service Phasing.....  | D-16 |
| Funding.....  | D-17 |
| Equipment and Facilities .....                              | D-17 |
| Organization.....   | D-18 |
| <b>CASE STUDIES</b> .....                                   | D-18 |
| Pittsburgh-Airport Busway Transit Center .....              | D-18 |
| San Jose-River Oaks Shuttle .....                           | D-18 |
| Chicago-Prairie Stone Industrial Park.....                  | D-19 |
| Denver-Highlands Ranch .....                                | D-20 |
| Sacramento-Cal Traction Corridor.....                       | D-20 |
| Los Angeles-Smart Shuttles/DASH Service.....                | D-21 |
| Seattle-Issaqua Highlands.....                              | D-22 |

# APPENDIX D. TRANSIT STUDY

---

## SUMMARY RECOMMENDATIONS

The transit plan for the Black Mountain Ranch North Village suggests a phased approach to transit development, based in great part on partnerships to be developed with major employers and the regional transit agencies. The development of such relationships will depend on the leadership of certain key institutions, including the developers of Black Mountain Ranch. These three themes, phasing, partnerships and leadership, are detailed below.

### Phasing

Current plans for road development to the North Village (essentially, building only access to the south until improvements are made on the I-15 corridor) suggest a two-phased approach to transit development. These phases also follow a pattern identified in the case studies that accompany this report, and hence represent not just the reality of traffic planning, but the preferred means of transit service implementation.

Phase I. The “chicken-and-egg” problem of developing transit service to new developments (whether transit should precede or follow settlement) suggests an initial approach to transit development which is low-cost, flexible, and tied directly to places of high demand (so as to “jump-start” interest in transit services). A vanpool program, connecting the North Village with a few key employment sites, is recommended for Phase I. Such a program involves manageable capital costs, low operating costs, relatively low administrative overhead and allows for cost-sharing among a variety of beneficiaries and agencies. What’s more, a vanpool program creates a class of transit service which is time-competitive with the auto, a key factor in appealing to the mode-choice (auto driver) market. Vanpools do not happen in a vacuum. An effective vanpool program will require the identification of employer partners and the support and leadership of the San Diego Association of Governments (SANDAG) and the regional transit agencies (especially as effective vanpool programs require a package of related services, such as Guaranteed Ride Home). Still, the low costs and high potential benefit of this type of program makes it a natural choice for Phase I services.

Phase II. Once a road connection to the east is established, two kinds of transit services become feasible. The first involves the extension of the terminus of the County Commuter Express Bus Route 850 to the North Village Transit Center. Such an extension could be accomplished at very little additional cost to county Transit and would provide direct peak-hour service from Black Mountain Ranch to employment sites downtown.

The second kind of Phase II transit service depends on the development by the Metropolitan Transit Development Board (MTDB) of some kind of rapid transit service along the I-15 corridor, most likely the “Bus Rapid Transit” alternative currently being studied. If this, or some similar service, provides direct connections to major employment centers and residential zones, then it would be feasible to design a bus shuttle system connecting Black Mountain Ranch with the proposed transit station at Bernardo Center Drive and I-15,

providing that co-sponsoring arrangements may be made with key employers in the Bernardo Industrial Park and potentially with the 4S Ranch development. Such a multi-purpose shuttle can be designed to provide excellent connections for Black Mountain (and possibly 4S) residents to and from the I-15 service, as well as for employees of the industrial park making the reverse commute. Several potential routings are included in the body of this report. The experience of other developments implementing similar shuttles is outlined in the case studies that accompany this report.

## **Partnerships**

The key to devising effective transit services is the development of partnerships with other key actors. Both the proposed vanpool program and the potential shuttle program depend on the quality of transit connections that are made for residents of Black Mountain Ranch. For that reason, it is important to identify the employment sites most likely to benefit from co-sponsoring vanpools, as well as to plan jointly with neighboring residential and industrial developments any potential shuttle service to connect into I-15 service, when and if that service becomes established. Partnerships will necessarily involve several key elements: capital financing, operating financing and facility provision. Employers who will benefit from the vanpool program (a direct benefit is a reduction in parking needs; an indirect benefit is a reduction in employee stress levels) may contribute directly to the costs of establishing vanpools (both capital and operating), or may contribute indirectly through an “eco pass” program with the appropriate transit agency. Eco passes (essentially, a program by which transit passes are made available to all employees in an organization in exchange for a steep discount in the per-employee price, paid by the employer) offer an excellent opportunity to design and fund such tailor-made services as part of a coherent package of services; the MTDB in particular is interested in developing its eco pass program.

Employers will also need to make certain facilities available to vanpoolers, such as preferred parking, so as to reward participation in pool programs.

## **Leadership**

If the phased transit strategy depends on building effective partnerships, and effective partnerships involve more than just a strong bilateral relationship, then it is clear that some leadership will be necessary to create and sustain mutually beneficial partnerships. Black Mountain Ranch will need to work directly with the MTDB, the NCTD and SANDAG (through its RideLink office) to encourage these organizations to assume a leadership role in identifying potential partners, establishing policies that encourage joint vanpool and shuttle programs, and in devising equitable financing arrangements to make such services and programs economically viable. A strong commitment by the regional transit agencies to develop strong vanpool and shuttle programs can help ensure widespread participation and cost efficiencies. Both the Santa Clara Valley Transportation Authority’s shuttle program and the suburban Chicago PACE’s vanpool program should be studied as models for how to develop these kinds of programs. Black Mountain Ranch has already demonstrated significant initiative in promoting a transit-friendly urban design for the North Village and in highlighting the importance of transit in serving this project. This report contains several suggestions as to how to maximize the centrality of transit to the project; such efforts on the part of Black Mountain Ranch should prompt the regional transit agencies and employer partners to provide

the kinds of services and facilities that will truly provide viable and popular alternatives to automobile travel.

## **CURRENT TRANSIT PLANS FOR THE I-15 CORRIDOR**

The Interstate 15 corridor south of Escondido falls within the service area of the Metropolitan Transit Development Board (MTDB). The corridor is minimally served by the San Diego Transit Route 20 bus and several “commuter express” buses run by county Transit. The corridor is the focus of a major investment study to determine whether improved services are warranted. The ultimate quality of transit service to Black Mountain Ranch will depend on the results of this study.

### **MTDB Route 20**

The Route 20 bus runs “express” service between North County Fair and downtown San Diego. Buses run approximately every half hour during the day in both directions seven days a week (with shorter service spans on weekends). Trip times from the Bernardo Industrial Park to Downtown are approximately 1:25; trips to Fashion Valley take about 1:15. This route will almost definitely be terminated or changed significantly following implementation of any new major I-15 corridor transit service.

### **Commuter Express Route 850**

County Transit Service (CTS) runs a commuter express bus between downtown San Diego and the western fringe of Rancho Bernardo. This bus has a terminus at Bernardo Center Drive and Maturin Drive, just off Camino del Norte. The 850 makes six stops en route through Rancho Peñasquitos before continuing direct to downtown. There are four runs, all southbound, in the morning (beginning at 5:53 A.M. at 30-minute frequencies) and four, all northbound, in the afternoon (beginning at 4:01 P.M. and leaving at 30-minute frequencies). Trip time between the terminus and Fifth & B is 45 minutes. The commuter express buses are generally well used and popular with riders. Most riders are drawn from the mode-choice (car owner) market, and average household incomes are above \$40,000/year. Though riders pay a premium to use these buses, a large per-passenger subsidy is still required (due in part to the relatively small share of in-service time per each hour of operation). This large subsidy threatens the expandability of the program. Buses are contracted to private operators, who use the vehicles to conduct tour and charter services during the day.

### **I-15 Corridor Service**

The MTDB is in the early stages of a major study analyzing service alternatives for the Interstate 15 corridor. Though Light Rail (trolley) is frequently championed by elected officials, usage and cost studies tend to highlight the impracticality of trolley service on this corridor.\* The MTDB is currently investigating the possibility of “Bus Rapid Transit” service instead, using some form of bus running on managed lanes with direct on/off ramps to transit centers en route. The Bus Rapid Transit system would be comprised of two kinds of routes:

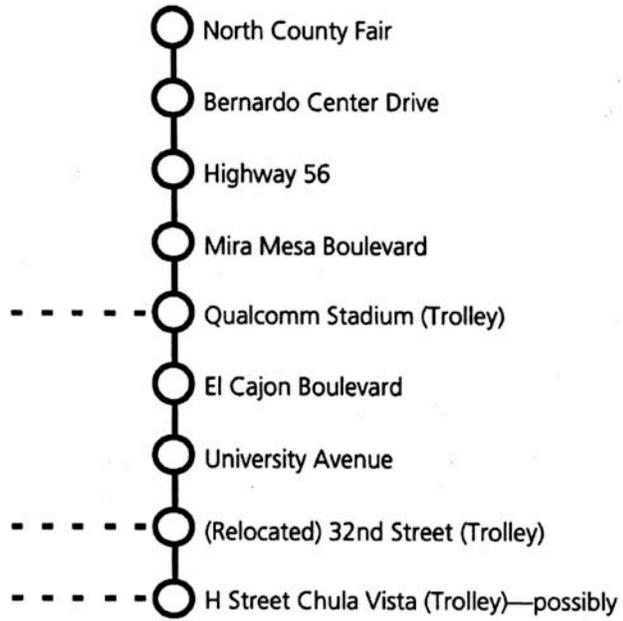
---

\* The four primary problems with Light Rail in this corridor are costs of construction, routing, station location and service speed.

1. Trunk line service along the corridor, operating throughout the day; and
2. Peak-hour overlay service, serving origins or destinations not on the corridor itself (for example, from BMR Transit Center to Sorrento Mesa).

The stations planned for the corridor would be as follows (dashed lines indicate transfer stations to existing or planned trolley stations).

It is worth noting that no station is planned for Camino del Norte; any access to Black Mountain Ranch will need to be via Bernardo Center Drive. If the planned Bus Rapid Transit system were run with the frequency of the trolley, it would feature service every 15 minutes throughout the day.



Phase I of the I-15 corridor study, the narrowing of alternatives, will be completed by Fall, 1998. Phase II, the refining of the service concepts, will begin in 1999. Funding concerns, particularly for the operating costs of providing service, will be a major issue. There are a number of concerns with the proposed routing of the Bus Rapid Transit system which are addressed in the Key Points to Be Raised with the MTDB section of this report.

## SERVICE OPTIONS

There are four service options which can provide transit service to the Black Mountain Ranch North Village.

### Extend Commuter Express Bus 850

There are two means of extending the County Transit Route 850 bus:

1. Extension. Establish a new terminus at the North Village Transit Center, possibly moving the Bernardo Center Drive/Maturin Drive stop to Bernardo Center Drive by Camino del Norte.
2. Route splitting. Divide the 850 into two routes: one serving just Rancho Peñasquitos (with a terminus at Peñasquitos Drive and Carmel Mountain Road), the other serving Rancho Bernardo West, 4S Ranch and Black Mountain Ranch, with a terminus at the North Village Transit Center. This arrangement may make sense, when one considers that the 850 has the highest ridership per revenue mile (FY 1996 data), the lowest per-passenger subsidy, and the highest ridership per revenue hour of all the Commuter Express services. By splitting the route, new ridership can be accommodated on the route and trip times improved for Bernardo-area riders. If service were provided on the reverse commute, it might be possible to solicit employer contributions to the routes provided they were served by direct stops.

The cost of providing 850 service (1996 data) was \$212,788, of which \$92,598 was recovered by fares. Total subsidy amount was \$120,190. It is possible that financial performance could be improved, at least slightly, if revenue service were offered in both directions during each time period, especially if the buses were routed by one of the key employers in the Bernardo Industrial Park.

Of the two options, the first—extension—appears to involve the fewest costs (though the time implications of extending the terminus have not yet been worked out), whereas the second—route splitting—involves considerable costs.

### **Establish vanpools to key employment sites**

Vanpools are a very cost-effective transit service, since they eliminate the single largest component of operating costs: the price of labor. The concentration of some 2,000 residential units near the North Village Transit Center, as well as the presence of HOV lanes (and future managed lanes) on I-15 improves the potential attractiveness of vanpools to those who choose to live in Black Mountain Ranch and work at major employment sites in the metro area. Vanpools may also be partially funded through employer eco pass programs (which the MTDB is currently developing). Vanpools may also run on alternative routes, such as south to State Route 56 (SR-56), with no degradation in service compared to automobiles.

### **Establish a local shuttle service**

Should some form of regular, high-grade transit service be established along the I-15 corridor (such as the Bus Rapid Transit system under consideration), and should this system feature appropriate links to key demand generators (such as employment and entertainment sites), there might be sufficient incentive to establish a supporting local shuttle service connecting the North Village Transit Center with the I-15 system.

A local shuttle service works best when it offers a reasonably direct, quick and convenient connection. A local shuttle also works best if it supports employment as well as residential destinations.

A rough routing for a local shuttle service suggests a single “loop” connecting the residential areas of North Village and potentially 4S Ranch, major employers in the Bernardo Industrial Park (and North Village), and the proposed Rapid Bus station on Bernardo Center Drive. Service need only be offered in one direction in the A.M. peak and the reverse direction in the P.M. peak. In the A.M. peak, shuttles would leave the Rapid Bus station and traverse the industrial park, dropping off workers brought in on the rapid buses. The shuttle would then continue to the residential developments, where it would take on local residents on their way to the rapid buses. The shuttle would then proceed directly back to the rapid bus station. In the P.M. peak, the direction would be reversed. This routing minimizes trip times and maximizes capacity along the route. Maps illustrating potential routings follow the route descriptions.

| <b>A.M. Peak Routing</b>   | <b>A.M. Peak Alternative Routing</b>   | <b>P.M. Peak Routing</b>   | <b>P.M. Peak Alternative Routing</b>   |
|--|--|--|--|
| Begin at Rapid Bus Station "A"   |
| Continue through Industrial Park "B" on route, stops to be determined              | Continue through Industrial Park "B" on route, stops to be determined              | Proceed to North Village East Stop "D," serving the employment centers and schools | Proceed potentially to 4S Ranch Transit Center "C"                                 |
| Proceed potentially to 4S Ranch Transit Center "C"                                 | Proceed to North Village East Stop "D," serving the employment centers and schools | Proceed to North Village Plaza/Transit Center "E"                                  | Proceed to North Village East Stop "D," serving the employment centers and schools |
| Proceed to North Village East Stop "D," serving the employment centers and schools | Proceed to North Village Plaza/Transit Center "E"                                  | Proceed to North Village Senior Center "F" (possibly off-peak only)                | Proceed to North Village Plaza/Transit Center "E"                                  |
| Proceed to North Village Plaza/Transit Center "E"                                  | Proceed to North Village Senior Center "F" (possibly off-peak only)                | Proceed potentially to 4S Ranch Transit Center "C"                                 | Proceed to North Village Senior Center "F" (possibly off-peak only)                |
| Proceed to North Village Senior Center "F" (possibly off-peak only)                | Proceed potentially to 4S Ranch Transit Center "C"                                 | Continue through Industrial Park "B" on route, stops to be determined              | Continue through Industrial Park "B" on route, stops to be determined              |
| Continue directly to Rapid Bus Station "A"   |

## **Proposed A.M. — Peak Routing**

Begin at Rapid Bus  
Station “A”

Continue through  
Industrial Park “B” on  
route, stops to be  
determined

Proceed potentially to  
4S Ranch Transit  
Center “C”

Proceed to North  
Village East Stop “D,”  
serving the  
employment centers  
and schools

Proceed to North  
Village Plaza/Transit  
Center “E”

Proceed to North  
Village Senior Center  
“F” (possibly off-peak  
only)

Continue directly to  
Rapid Bus Station “A”

## **Proposed A.M. — Peak Alternative Routing**

Begin at Rapid Bus  
Station “A”

Continue through  
Industrial Park “B” on  
route, stops to be  
determined

Proceed to North  
Village East Stop “D,”  
serving the  
employment centers  
and schools

Proceed to North  
Village Plaza/Transit  
Center “E”

Proceed to North  
Village Senior Center  
“F” (possibly off-peak  
only)

Proceed potentially to  
4S Ranch Transit  
Center “C”

Continue directly to  
Rapid Bus Station “A”

## **Proposed P.M. — Peak Routing**

Begin at Rapid Bus  
Station “A”

Proceed to North  
Village East Stop “D,”  
serving the  
employment centers  
and schools

Proceed to North  
Village Plaza/Transit  
Center “E”

Proceed to North  
Village Senior Center  
“F” (possibly off-peak  
only)

Proceed potentially to  
4S Ranch Transit  
Center “C”

Continue through  
Industrial Park “B” on  
route, stops to be  
determined

Continue directly to  
Rapid Bus Station “A”

## **Proposed P.M. — Peak Alternative Routing**

Begin at Rapid Bus  
Station “A”

Proceed potentially to  
4S Ranch Transit  
Center “C”

Proceed to North  
Village East Stop “D,”  
serving the  
employment centers  
and schools

Proceed to North  
Village Plaza/Transit  
Center “E”

Proceed to North  
Village Senior Center  
“F” (possibly off-peak  
only)

Continue through  
Industrial Park “B” on  
route, stops to be  
determined

Continue directly to  
Rapid Bus Station “A”

The development of this kind of shuttle routing accomplishes several objectives.

1. Unlike current Commuter Express Bus system, it creates a viable two-way system (bringing workers to the target zone and bringing residents from that zone to employment sites elsewhere).
2. It allows for a wider base of support than a shuttle serving one residential development exclusively or serving such developments only.
3. By providing transit access in three points of North Village, it meets the needs of three distinct groups: those arriving from other points (including 4S Ranch) who work in the North Village employment district or in the schools, residents in the core village area, and seniors in the senior housing to the west.

What would a shuttle system cost? There are a number of variables at work, such as hours of service and number of vehicles needed. If a single round trip can be accomplished in under 15 minutes, then only a single vehicle would be needed to achieve service matching likely service on the proposed Bus Rapid Transit system. The following table suggests a range of likely costs.

| Hours of Operation |               | Hours per Day | Days per Week | Hours per Year | Cost per Year @ |            |
|--------------------|---------------|---------------|---------------|----------------|-----------------|------------|
| A.M.               | P.M.          |               |               |                | \$37.50/hr      | \$60.00/hr |
| 6:00 - 9:00        | 4:00 - 7:00   | 6             | 5             | 1,560          | \$58,500        | \$93,600   |
| 5:30 - 9:30        | 3:30 - 7:30   | 8             | 6             | 2,496          | \$93,600        | \$149,760  |
| 6:00 - 11:59       | 12:00 - 10:00 | 16            | 7             | 5,824          | \$218,400       | \$349,440  |

Clearly, there is a wide range of potential costs. It is recommended that any funding plan involve partnerships among the beneficiaries of such services as well as the regional transportation agencies. Such collaborative efforts can also improve the chances of qualifying for state or federal assistance. It is also recommended, following the Santa Clara VTA's example (outlined in the case studies that accompany this report), that shuttle services remain free to the rider, especially if residents and employers (the beneficiaries) make contributions to the operating budget for the service.

**Establish bus rapid transit special service**

The Bus Rapid Transit Service being studied for the I-15 corridor involves two kinds of services: trunk line and peak-hour. Peak-hour services will supplement the trunk line service, and will involve buses leaving the I-15 corridor in order to reach key employment sites throughout the metro area. Such buses will pass through a major transit center at the intersection of I-15 and SR-56, allowing extensive transfers among routes. Black Mountain Ranch should keep apprised of the development of these services, and offer its North Village Transit Center as a logical terminus for some of these routes. In addition to the benefits to the regional transit agencies, such services will allow residents of Black Mountain Ranch to ride single vehicles to get to a range of important destinations.

## KEY ISSUES FOR BLACK MOUNTAIN RANCH

### Station location and design

The design and siting of the proposed North Village Transit Center depends in part on the kinds of transit services to be developed.

| Potential Service      | Station Requirements  |
|------------------------|---|
| Extension of Route 850 | Single Transit Center   |
| Vanpool Program        | Single Transit Center   |
| Local Shuttle Service  | “Split” Transit Center plus two supplemental stations (West Senior Station and East Employment Station) |
| Rapid Bus Peak Service | Single Transit Center   |

As described above, stations requirements depend in great part on the kinds of transit services offered. Commuter services generally require only a single transit station, since most workers live within walking distance of the likely locations of that station or will access that center through park-and-ride or kiss-and-ride. Shuttle services create two additional kinds of trips: people arriving to work in the North Village and seniors from the North Village (and students) making non-work trips. To accommodate these two groups, additional roadside "stations" may be useful, one in the eastern part of North Village by the schools and employment center, the other in the heart of the seniors residential complex (almost all of which lies beyond 1/4 mile of the proposed Transit Center).

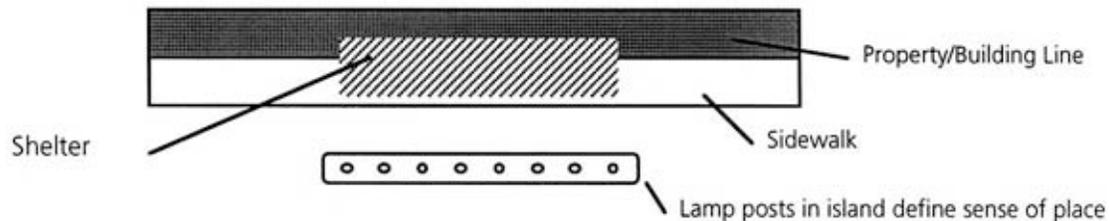
Station location principles. A goal of developments influenced by the “New Urbanism” is to promote transit use through design that accords transit a central role in serving destinations. Peripheral locations for transit access are discouraged, as peripheral locations tend to diminish the value and utility of transit in the eyes of potential users. This is known as the “Harvard Square Rule”—to the extent that transit access is in the center of the target area, it becomes synonymous with that area.

The proposed location for the Transit Center places it slightly outside the core service area. While this location makes sense in terms of the adjacent park-and-ride facility, it means that those walking to transit from the surrounding neighborhood will need to leave the core “defined” spaces and wait in what is essentially a parking lot.

At the same time, there are two different transit conditions at the Transit Center. Commuter bus services, if offered, generally feature larger vehicles. Any shuttle service would likely feature smaller, more street-friendly vehicles.

A possible solution to the “centrality” problem would be to locate transit access one block south of the proposed Transit Center (which would remain a park-and-ride facility), with the station itself “bridging” the block. The shuttle bus stop could be located on the Promenade as close as possible to the Village Green, with a walk-through to the rear of the block, where commuter bus bays and kiss-and-ride facilities can be offered. An illustration of this concept follows.

The East and West substations should, if adopted, follow a similar design pattern to the Village Green Shuttle Station. A row of street lamps can help define the space, and seating should be sheltered and pushed back from the street curb so that those waiting feel less “exposed.” Sensitive design can help ensure acceptance of the transit services. An illustrated diagram of a satellite station follows.



### **Potential vehicle design**

There exists a growing body of evidence, to which the case studies bear witness, that smaller buses are viewed more favorably in residential zones, both by nonriders and riders. Smaller buses appear less threatening, are easier to maneuver, and can feel safer to riders. At the same time, transit agency personnel prefer to avoid the smaller transit vehicles due to claims that such vehicles are not sufficiently robust to last through a reasonable duty cycle. There is therefore a growing tendency to settle on 30-foot (as opposed to the more traditional 40-foot) buses as the shuttle vehicles of choice for serving residential neighborhoods. Such vehicles are typically stronger than smaller buses, have reasonable capacity (approximately 25 passengers), and are generally viewed more positively than larger buses.

### **Partnership-building**

The shuttle and vanpool proposals suggested here both require partnerships among several actors—Black Mountain Ranch, other nearby residential developments, key employers in Bernardo Industrial Park, key employers in other locations in the metro area and the various regional transportation agencies. Such partnerships require some degree of leadership to forge; assistance in developing these relationships may be available from the MTDB, SANDAG’s RideLink Program and the Transportation Alliance of Greater San Diego (formerly the Transportation Management Association).

## **KEY ISSUES TO BE RAISED WITH THE MTDB**

### **Improve I-15 Rapid Transit Routing**

Current plans for the I-15 Rapid Bus alternative are only tentative. Just the same, these plans anticipate a service along the I-15 corridor that will not serve any key employment centers south of SR-56. Such a system may make sense on operational grounds (by operating solely on I-15, the buses can achieve impressive throughspeeds and maintain schedule adherence), but fails on market grounds—the system will require too many potential riders to make too many transfers, some of them uncomfortable, in order to access major employment centers.

For the I-15 service to truly meet the needs of future residents of Black Mountain Ranch, it will need to feature direct service to major employment centers: downtown, Kearny Mesa and the UTC/Sorrento area. Even then, local connecting shuttles might be necessary. The following diagram suggests the kinds of linkages that will be important.



A related issue deals with the frequency of service along the corridor. The current trolley system runs trains every fifteen minutes—but only attracts an approximately 35 percent mode-choice ridership (riders who claim they could have driven a car instead).

The MTDB will need to ensure that service frequencies on the I-15 rapid transit service are sufficient to attract and meet the needs of this overwhelmingly mode-choice market.

### **Promote a regional shuttle strategy**

The development of new high-speed bus services along I-15 suggests the need for a range of connecting shuttle services, much as have been developed by the Santa Clara VTA (outlined in the case studies that accompany this report). The MTDB should be encouraged to develop a shuttle strategy, based on some of the lessons learned in this study, so as to achieve the following goals:

- Better qualify for any state or federal discretionary or demonstration funding;
- Achieve cost-savings through combined bids;
- Extend the reach (and hence attractiveness) of transit investments, thereby improving the likelihood of employer participation;
- Attract more riders to transit services; and
- Prioritize such services for funding, particularly when they meet multiple objectives (such as supporting transit-oriented developments and employment sites).

### **Design vanpool/shuttle services into Eco Pass programs**

Eco pass programs are ideal vehicles for developing funding for specific vanpool and shuttle services. Employers benefit as their need for parking is reduced (and many employers are currently experiencing parking shortages), employees benefit from the range of supporting services (such as guaranteed ride home programs) that are usually built into eco passes, and developments such as Black Mountain Ranch benefit by establishing low-cost, high-impact transit services that reduce local traffic and attract transit-friendly residents.

### **Stress importance of SR-56/I-15 transfer station**

The proposed Bus Rapid Transit station to be located at the intersection of I-15 and SR-56 will be the most important station on the route, as it will serve as the primary transfer point for vehicles traveling west to major employment centers in the Sorrento/Golden Triangle/Miramar zones and east to employment centers in Poway. The MTDB should be encouraged to develop a facility which meets the needs of those for whom the Bus Rapid Transit service is being explored.

### **SOURCES OF FUNDING**

The case studies reviewed at the end of this report suggest a range of funding sources.

#### **Clean Air funding**

The Santa Clara Valley Transportation Authority (VTA) relies on state Clean Air Funding to help operate its shuttle service. Each metro area/county disburses these funds according to localized criteria, but there is no reason this alternative should not be explored further, especially if the proposed services enhance the value and attractiveness of transit services in general.

#### **Subscription fees**

Certain agencies run subscription services, which are buses that provide transportation to specific employment sites only for those riders who reserve and pay for a seat on these services. While such a service may be established where demand warrants, it is the experience of some agencies that such services are transitional: they either want to be vanpools (lower cost) or grow to become fixed-route regular service. Still, subscription services may be fine for initiating new transit routes.

#### **One-time fees on developers or residents**

This is the approach being explored in Sacramento along the Cal Traction Corridor. A per-dwelling unit fee would be paid one-time only into a fund that would then cover the costs of operating new services for a two or three year period.

#### **Shared costs**

This is the approach used by the Santa Clara VTA to provide an extensive network of shuttle services. Under such a scheme, residential developments and employers served by shuttles together pay a percentage of the costs of providing the shuttle service, in perpetuity. Because the transit agency agrees to cover a major share of the costs (which it partly recoups by expanded use of existing connecting services), this approach results in relatively modest fees to the residential and industrial partners.

Both the one-time fee and shared cost arrangements create the possibility of offering shuttle services which are free to end-users. This kind of arrangement is useful for establishing services and building ridership quickly, particularly when most riders who use the shuttles will be connecting to paid services.

## **Eco pass fees**

Eco passes are transportation passes purchased by employers for all of their employees at heavily discounted prices. They are easy to administer, which accounts in part for their popularity. Because the price of eco passes is based in part on a calculation of the costs of providing transit services to employees (only a portion of whom which actually use such services), the cost per employee is relatively low. An eco pass program can also specify special or new transit services, such as shuttles, when they add value to the employer (it is often much cheaper to provide transit than to rent more parking spaces). Eco passes also shift the cost burden of providing useful transit services from users or residential projects to those who benefit most: employers of the people now served. The San Diego MTDB has expressed considerable interest in developing its eco pass program.

## **Multiagency agreements**

In certain cases, some funding arrangements are not possible due to legal concerns. In such cases, multiagency agreements can ensure the flow of funds from those paying for transit services to those operating such services. An example is Sacramento, which is exploring an arrangement by which transit fees are paid to the county, which may receive such funds, instead of to the transit agency directly, as it is prohibited from receiving fees for operating services.

## **ELEMENTS FOR SUCCESS**

The following “elements for success” were gleaned from the case studies that are included at the end of this report.

### **Service Planning**

- Focus on employers. Shuttle connections make more sense when they serve some people very well, as opposed to serving more people less well. It is better to work with certain key employers in providing direct connections than with providing generalized but low-quality access to more employment sites.
- Connections count. Links to regional systems make sense only if that system can take people where they want to go. It won't be enough to link stations on I-15; the system must include direct links to major employment sites.
- Attract the right customers. Some homebuyers will find transit access to be a positive attribute of Black Mountain Ranch. Attract these transit-friendly people to the project by making the connections visible.

### **Service Phasing**

- Look into vanpools. Vanpools are a simple and cost-effective way of initiating transit services. Because they rely on volunteer drivers, they have low operating costs. They also establish the presence of a transit center and promote the idea of transit services. Vanpools can be negotiated with specific employers and can form part of that employer's “eco pass” program.

- Don't jump the gun. Open-ridership services (those without a captive audience—the opposite of vanpools or subscription services) should not be implemented until a critical mass of residents is achieved. It is generally sufficient to publicize the fact that such services will be established once some critical milestone is reached.
- Start with peak-hour service. It is usually more cost-effective to offer new services during peak hours only. Once established, service hours may be increased.

## **Funding**

- Partnerships are critical. The most effective developments seem to involve the collaboration of regional transit agencies, residential developments and employment sites. What's more, such partnerships are weighed favorably by state and federal granting authorities.
- Explore the options. Some systems collect fees from residents/businesses or developers in order to guarantee funding for services for a start-up period of two to three years, with the agencies committed to assuming all funding responsibilities if ridership meets certain standards. Some agencies charge fares to use shuttle services, while others make them free to riders, especially if most riders are connecting to/from paid transit services. This shift of costs from users to beneficiaries also improves the attractiveness and operations of transit services (fare delays are avoided and it becomes easier to ride).
- Look to employers. Employers may be willing to pay to support certain kinds of transit services, especially if they are facing parking shortages. Employers may make specific contributions to fund shuttles or they may purchase shuttle services as part of an overall "eco-pass" program. Either way, employer buy-in is crucial. It is also much easier to work with a "lead employer" such as Sony, and have other employers sign Memos of Understanding with the lead employer to ensure funding and minimize administrative difficulties.
- Promote a regional approach to shuttles. Economies of scale are achieved when multiple shuttle systems are put out to bid as a group. The MTDB should be encouraged to package shuttle services together in order to obtain the lowest cost for operating them.

## **Equipment and Facilities**

- Use smaller vehicles. Transit users and residents seem to prefer smaller, nicely painted vehicles. They appear more inviting to riders, less threatening to residents, and are identified more with the areas they serve.
- Build places. Transit Centers seem to be more effective and more popular when they are identifiable "places" that are themselves pleasant and somehow visually tied into activity centers. When Transit Centers are visually identifiable, they confer a greater sense of permanence, which means they tend to attract transit-friendly people to become residents in the nearby areas.
- Location is critical. Transit Centers need to be located in central as opposed to peripheral sites. The ideal location for transit access is between a served destination and its parking lot.

- Drop-offs are important. Kiss-and-ride drop-offs seem to be more popular in practice than in theory. Transit Centers should have ample space for drop-offs.
- Mixed-use parking works. Whenever possible, park-and-ride lots should do double duty as parking for other activities, particularly those with complementary demand curves (such as cinemas, churches and even certain kinds of shops). This improves the feel of safety and security, as well as activity.

## **Organization**

- Identify lead employers. Any potential shuttle serving Black Mountain Ranch may also easily serve the Bernardo Industrial Park. It would be worthwhile to identify and work with a lead employer in this park to develop a funding and service plan for a specific shuttle route. There are also major employment sites, such as Qualcomm, SAIC, UCSD, SDSU and the New Century Center, where vanpool services might be jointly planned.

## **CASE STUDIES**

A number of case studies were identified nationwide with at least partial relevance to the Black Mountain Ranch development. Of these, the most important cases are the San Jose River Oaks Shuttle and the Sacramento Cal Traction Corridor.

### **Pittsburgh-Airport Busway Transit Center**

Context. The Port Authority of Allegheny County (PAT Transit) is developing a bus rapid transit service to the Pittsburgh airport, utilizing a dedicated “Busway” and interstate highways. Project. A new Transit Center is being developed at a shopping mall two miles beyond the end of the busway. PAT will be rerouting area service to use this center as a hub, allowing for greater efficiencies and expanded local service. Project completion date is set for 2000/2001. Funding. The developer is donating the land and setting aside 1,000 parking spaces. PAT Transit will pay all operating costs, using funding from ISTEA, §3 transit funding, flex funding and bus rerouting.

### **San Jose-River Oaks Shuttle**

Context. The Santa Clara Valley Transportation Authority has developed a network of 12 shuttle bus routes connecting to Light Rail or CalTrain stations. These shuttles serve major employment centers; one, the River Oaks Shuttle, also serves a residential development.

Project. The VTA runs peak hour shuttles (in-service times from 6:35 - 8:47 A.M. and 4:30 - 6:36 P.M.) with service every 20 minutes (seven trips each am and pm period) during weekdays only; total round-trip time is 12-15 minutes. The River Oaks Shuttle serves several major employers as well as residential developments (primarily condominiums and apartments) with 1,987 dwelling units, many of which are occupied by single professionals (with very few seniors).

Funding. The total annual cost of running the River Oaks Shuttle is between \$55,000-60,000. Costs are split three ways: 25 percent is paid by the seven residential developments and three employers served by the shuttle (Sony's share, for example, is \$2,400 per year); 50 percent comes from state grants (Transportation Fund for Clean Air Act AB434); the remainder is paid for by general VTA funds. Riders are not charged a fee for service. State funding is encouraged by the local cooperation.

Administration of program. The VTA bids multiple shuttles at once in order to achieve economies of scale. As a result of this approach, the VTA has reduced its shuttle per-hour cost of service from \$55-60 to \$37.50. The contract is held by Laidlaw, a national company.

Employer participation is handled by designating one company (in this case, Sony) as the "lead employer." The VTA signs a contract only with this company; Sony then signs Memos of Understanding with other employers and collects contributions from them. This arrangement is much easier for the transit agency to administer. Employers are assessed their contribution based on projected use of the shuttle; actual use is then audited, and contributions adjusted, after a period of service.

### **Chicago-Prairie Stone Industrial Park**

Context. Has no specific development resembling Black Mountain Ranch, though reports a Del Web development "on the drawing board." However, PACE—the suburban Chicago transit agency—is highly experienced in developing transit services to suburban locations. They report the following "lessons learned":

- *Location matters.* Placing transit access between a parking lot and the entrance to whatever the parking lot serves results in far better transit penetration than locating transit peripherally. PACE attributes such location decisions to transit's 30 percent share of work trips to the new suburban Sears corporate headquarters in the Prairie Stone Industrial Park.
- *Focus shuttle services.* It is better to target a single key employer than to attempt to serve all employers equally. Focus allows you to "get closer" and actually solve real trip needs. Such focused service is especially important if connections are also made to residential areas. It is normally quite difficult to get both industrial and residential areas served by a single shuttle.
- *Phasing happens.* The more permanent the transit facility, the more it helps the phasing process by stimulating people to locate near the facility. Subscription bus services should be seen as transitional: they either drop down to vanpool service (with a volunteer driver) or move up to fixed-route service. Be careful about preceding your market for service: you can waste a lot of money.
- *Drop-offs happen.* More people will be dropped-off than you expect. Kiss-and-ride is very big—much bigger than expected. Be sure to have adequate and convenient drop-off facilities.
- *Vehicles matter.* People don't like big buses. Fit the environment. Don't use too large vehicles. Smaller vehicles are less scary coming down the street, especially in residential neighborhoods.

Funding. PACE has an extensive vanpool program—the low operating costs (due to volunteer drivers) results in service that is all but self-financing.

### **Denver-Highlands Ranch**

Context. Highlands Ranch is a 35,000-person “New Urbanism” development located on the southern fringe of the Denver Metropolitan Area. Though the site is partially developed, most of it is still in the planning stages. The development had been begun by Mission Viejo, but had since been purchased by Shea Homes. Denver’s Light Rail system will be extended to within a few miles of Highlands Ranch; the area is currently served by several bus routes, including a form of commuter express service to downtown Denver.

Project. Denver’s Regional Transit District (RTD) is planning service changes associated with the Highlands Ranch development. The current express bus to downtown, which operates in the Ranch area as a local route, then as express-stop only in the nearby area, then direct express to Downtown, will be replaced with two key services: a “main line” shuttle connecting a new Light Rail station with the Highlands Ranch Transit Center (using 40-foot vehicles), and a local circulator shuttle within Highlands Ranch (using smaller vehicles, likely 30 feet). Travel time to the Light Rail will be approximately 12 minutes (with perhaps half a dozen stops en route); the trip downtown by train will take approximately 20 minutes. A third service, a “main line” bus route running up Broadway to downtown, will remain in place. The Town Center portion of the Highlands Ranch is designed similarly to Black Mountain Ranch’s North Village, though appears to be slightly larger, with a 15-acre “Civic Center” complex art of the town center.

The LRT connection will initially run with the same frequency as the commuter express service, with four runs during peak hours. Vanpools in Denver have not been especially successful; they are run by the Regional Council of Governments. The RTD is frequently asked to step in with 40-foot bus service to replace pool programs.

Funding. The RTD does not appear to worry terribly about funding.

### **Sacramento-Cal Traction Corridor**

Context. Sacramento has no current projects with the characteristics of Black Mountain Ranch, but it has a corridor, the Cal Traction Corridor, located in the southeast portion of the county, with characteristics somewhat reminiscent of I-15 in San Diego.

Project. Sacramento is looking at how to fund transit development in the Cal Traction Corridor. They're looking at developer agreements paid to the county, with the county then paying the transit agency to provide service. Though the corridor was initially intended for Light Rail, the transit agency is now exploring a bus rapid transit option.

The general policy for the corridor is to begin service only when a “critical mass” is achieved, and then to begin with just peak-hour service, either direct to downtown or to the nearest LRT station.

Developers will be expected to provide land for transit centers and parking. The transit agency would be responsible for providing bus shelters. Joint-use parking is fully permissible.

Funding. The fee plan being investigated is intended to generate seed money with which to establish new service. The goal is to fund, in advance, 100 percent of the direct operating costs (70-80 percent of the fully allocated costs) for two to three years of service, at which point the new routes can be evaluated for their efficacy. All development in this corridor will be expected to contribute an amount for both capital and operating costs (approximately \$150-200 per dwelling unit for capital costs, which may be paid in kind, and approximately \$100-150 per dwelling unit for operating costs). Capital costs are included in current fees paid by developers. The transit agency anticipates the cost of providing a single bus during peak hours at \$75,000 per year; a minimum of two buses would be needed to provide the necessary frequencies.

### **Los Angeles-Smart Shuttles/DASH Service**

Context. The city of Los Angeles, and the Los Angeles County Metropolitan Transportation Authority, have been instituting new forms of shuttle services in order to test the concepts involved and provide better alternative for short trip-making. All of the current shuttles serve well-developed urban areas (MacArthur Park, South Central, San Fernando Valley East and San Fernando Valley West).

Project. Two kinds of shuttle services are currently offered. Smart Shuttles follow generalized routes but may deviate a block or so to either pick people up or let them off closer to their origins/destinations. Fares are \$1, with a “deviation” fee of 25-50¢ additional. DASH buses (30 feet, 25-passenger vehicles) are fixed-route, fixed-schedule services that serve local routes. Both are proving popular. The smaller vehicles are deemed an important element of service, especially in residential areas.

Funding. The Smart Shuttles are funded for 18-month demonstration periods (the service is six months old). The entrepreneurs running these services contract directly with the city of Los Angeles. They receive from \$1 million to over \$2 million over the contract period; the entrepreneur has some discretion in determining the exact nature of service.

Lessons learned. The MTA reports a few key lessons:

- *Understand your market.* It's important to pay attention to where residents are most likely to come from. It is also helpful to involve the community in designing actual routings—community members may wish to access certain places by transit, and others by taxi or private vehicles.
- *System access.* If shuttles are links to a regional transit system, it's important to ensure that enough of that system is accessible to make transit a viable option.
- *System identification.* Riders seem to respond to services that are viewed as belonging to a neighborhood or community.

## Seattle-Issaqua Highlands

Context. Issaquah Highlands is a New Urbanism development planned for a suburban location approximately 18-20 miles east of central Seattle. Though it falls within the modified urban growth boundaries (modified in part to allow this “new urbanism” experiment to be built), it falls outside of the boundaries of the ten-year Sound Move rapid transit plan being implemented in the Puget Sound area (due most likely to inattention).

Project. Issaquah Highlands is still in the planning stages. Information posted on their web site ([www.issaquahighlands.com](http://www.issaquahighlands.com)) may not reflect current plans, but indicated three stages of development as follows.

| Phase          | Year | Single-family Units | Multifamily Units | Retail s.f.    | Commercial s.f.  |
|----------------|------|---------------------|-------------------|----------------|------------------|
| 1              | 1998 | 320                 | 320               | 50,000         | 250,000          |
| 2              | 2001 | =1,300              | =1,300            | 375,000        | 1,250,000        |
| 3              | 2002 |                     |                   |                | 1,450,000        |
| <b>Totals:</b> |      | <b>=1,620</b>       | <b>=1,620</b>     | <b>425,000</b> | <b>2,950,000</b> |

The proposed project is comparable to Black Mountain Ranch, with approximately 60 percent of the housing units, nearly three times the retail, and six times the commercial. Microsoft Corporation has an option on all of the commercial space.

A central feature of the proposed Issaquah Highlands is the proposed transit center/park-and-ride lot(s). At least 500 parking spaces, and perhaps more, will be dedicated to park-and-ride in at least one, and possibly more locations. King County Metro, the transit provider, is looking at providing a total of 20,000 annual service hours to Issaquah Highlands (approximately 40 one-way trips per day), divided among two classes of transit services: commuter express service in the peak periods (most likely to downtown Seattle) and a more local routing throughout the off-peak periods (involving stops at other demand generators en route, such as the University of Washington campus). In addition, the developer has suggested the need for a local circulator shuttle; King County Metro has requested that the developer fund the shuttle at first, and that Metro would take over the route “if it is successful.” No decisions have been reached on any of these points.

Funding. Funding has not been determined for any of the transit alternatives, and there is still considerable discussion as to what form transit will take to the development.

---

# **APPENDIX E**

## Transportation Phasing Program

**SUMMARY OF REQUIRED CIRCULATION IMPROVEMENTS BY PHASE**  
**Black Mountain Ranch Revised VTM and the Remainder of Black Mountain Ranch Subarea I**

| Facility  | Location   | Required Improvement Description*   |
|---|--|---|
| <b>Vesting Tentative Map Phase One:</b> Prior to development in the Vesting Tentative map are, the following improvements shall be assured to the satisfaction of the City Engineer:                              |  |   |
| <b>On-Site Roads</b>  |  |   |
| Black Mountain Road   | Carmel Valley Road to existing Black Mountain Road | Construct 4-lane major street.  |
| Camino Ruiz   | @ San Dieguito Road                                | Construct traffic signal.   |
| Camino Ruiz   | San Dieguito Road to Carmel Valley Road            | Construct 2 lanes of an ultimate 4-lane major road.   |
| Camino Ruiz   | @ B Street   | Construct traffic signal.   |
| Camino Ruiz   | @ Carmel Valley Road                               | Construct traffic signal.   |
| Carmel Valley Road  | @ Black Mountain Road                              | Construct traffic signal.   |
| San Dieguito Road   | Property boundary east to Camino Ruiz              | Construct 2-lane collector street with intersection widening.   |
| <b>Off-Site Roads</b>   |  |   |
| Black Mountain Road   | @ Maler Road                                       | Construct traffic signal.   |
| Black Mountain Road   | @ SR-56 WB ramp                                    | Widen WB approach for dual lefts and right-turn lanes. Modify signal.   |
| Black Mountain Road   | @ SR-56 EB ramp                                    | Widen SB approach for dual lefts. Widen NB approach for exclusive right-turn lane.                              |
| Black Mountain Road   | @ Park Village Road                                | Widen SB approach for exclusive right-turn lane.  |
| Carmel Valley Road  | Western portion of SR-56 to Via Abertura           | Provide striping, signing and widening improvements as required by City Engineer. Enhance existing 2-lane road. |
| Carmel Valley Road  | Via Abertura to Black Mountain Road                | Construct 2 lanes of an ultimate 4-lane major road with intersection widening.                                  |
| Carmel Valley Road  | @ Rancho Santa Fe Farms Road                       | Construct traffic signal.   |
| El Camino Real  | @ San Dieguito Road                                | Widen WB approach for shared left and right-turn lane.  |
| Rancho Peñasquitos Boulevard  | @ SR-56 WB ramp                                    | Widen WB off-ramp to provide a center/left/through/right-turn lane.   |
| <b>Vesting Tentative Map Phase Two:</b> Prior to exceeding 600 equivalent dwelling units in the Vesting Tentative map area, the following improvements shall be assured to the satisfaction of the City Engineer: |  |   |
| <b>On-Site Roads</b>  |  |   |
| Camino Ruiz   | Carmel Valley Road to SR-56                        | Construct 4-lane major street.  |
| State Route 56  | Black Mountain Road to Camino Ruiz, or             | Extend to Camino Ruiz.  |
| Camino Ruiz   | San Dieguito Road to Carmel Valley Road            | Construct 4-lane major street.  |
| <b>Off-Site Roads</b>   |  |   |
| Carmel Valley Road  | @ I-5 SB ramp                                      | Re-stripe the intersection for a WB shared left/through lane. Modify signal for split phasing.                  |

**SUMMARY OF REQUIRED CIRCULATION IMPROVEMENTS BY PHASE (cont.)**  
**Black Mountain Ranch Revised VTM and the Remainder of Black Mountain Ranch Subarea I**

| <b>Facility</b>   | <b>Location</b>                            | <b>Required Improvement Description*</b>                                 |
|---|--|--|
| <b>Black Mountain Ranch Subarea I Phase One:</b> Prior to exceeding 2,628** equivalent dwelling units in the Vesting Tentative Map area and any equivalent dwelling units in the remainder of Subarea I, the following improvements shall be assured to the satisfaction of the City Engineer:  |  |  |
| <b>On-Site Roads</b>  |  |  |
| Camino Ruiz   | Resort Street to San Dieguito Road         | Construct 2 lanes of an ultimate 4-lane major street.                    |
| Camino Ruiz   | San Dieguito Road to Carmel Valley Road    | If not complete, widen to 4-lane major street.                           |
| Internal Roadways   | As needed                                  | Construct roadways and traffic signals.                                  |
| <b>Off-Site Roads</b>   |  |  |
| Black Mountain Road   | @ Park Village Road                        | Construct intersection improvements (NB dual left). <sup>1</sup>         |
| Camino Ruiz   | Southern project boundary to SR-56         | Construct 2 lanes of an ultimate 4-lane major street.                    |
| Camino Ruiz   | @ SR-56                                    | Construct diamond interchange.   |
| Camino Ruiz   | SR-56 to Carmel Mountain Road              | Construct 4-lane major street.   |
| Camino Ruiz   | Carmel Valley Road to Dormouse Road        | 2-lane collector.  |
| Camino Santa Fe   | SR-56 to Carmel Valley Road                | Construct 4-lane major street.   |
| Carmel Valley Road  | Camino Ruiz to Black Mountain Road         | If not complete, widen to 4-lane major street.                           |
| Carmel Valley Road  | Camino Santa Fe to Camino Ruiz             | Construct to 4-lane major street.  |
| Del Mar Heights Road  | Lansdale Drive (E) to Camino Santa Fe      | Construct 6-lane/4-lane major roadway.                                   |
| El Apajo  | Via de Santa Fe to San Dieguito Road       | Widen to 3 lanes.  |
| El Camino Real (W)  | Via de la Valle to Half Mile Drive         | Widen to 4-lane street.  |
| Interstate 5  | SR-56 to I-805                             | Construct dual freeways.   |
| San Dieguito Road   | El Camino Real to San Diego City limits    | Spot intersection improvements. <sup>1</sup>                             |
| San Dieguito Road   | @ El Apajo                                 | Construct traffic signal.  |
| San Dieguito Road   | El Apajo to Camino Ruiz                    | Spot intersection improvements. <sup>1</sup>                             |
| State Route 56  | @ Camino Santa Fe                          | Construct interchange.   |
| State Route 56  | Carmel Valley to Black Mountain Road       | Construct 4-lane expressway.   |
| State Route 56  | @ I-15                                     | Construct EB to NB loop ramps, and SB on-ramp, EB to SB right-turn lane. |
| Via de la Valle   | I-5 to San Andres Drive                    | Re-stripe for 6 lanes.   |
| Via de la Valle   | San Andres Drive to El Camino Real (E)     | Widen to 4-lane street.  |
| <b>Black Mountain Ranch Subarea I Phase Two:</b> Prior to exceeding 2,628** equivalent dwelling units in the Vesting Tentative Map area and 1,582 equivalent dwelling units in the remainder of Subarea I (totaling 4,210 equivalent dwelling units in all of Subarea I), the following improvements shall be assured to the satisfaction of the City Engineer: |  |  |
| <b>On-Site Roads</b>  |  |  |
| Camino Ruiz   | Resort Street to San Dieguito Road         | Widen to 4-lane major.   |
| Resort Street   | Camino Ruiz to eastern project boundary    | Construct 4-lane collector.  |
| Internal Roadways   | As needed                                  | Construct roadways and traffic signals.                                  |
| <b>Off-Site Roads</b>   |  |  |
| Camino Ruiz   | Carmel Valley Road to Carmel Mountain Road | Widen to 6-lane primary.   |
| State Route 56  | I-5 to I-15                                | Widen to 6-lane freeway.   |
| State Route 56  | @ I-5                                      | Construct north-facing ramps.  |
| State Route 56  | @ Camino Ruiz                              | Construct partial cloverleaf interchange.                                |

**SUMMARY OF REQUIRED CIRCULATION IMPROVEMENTS BY PHASE (cont.)**  
**Black Mountain Ranch Revised VTM and the Remainder of Black Mountain Ranch Subarea I**

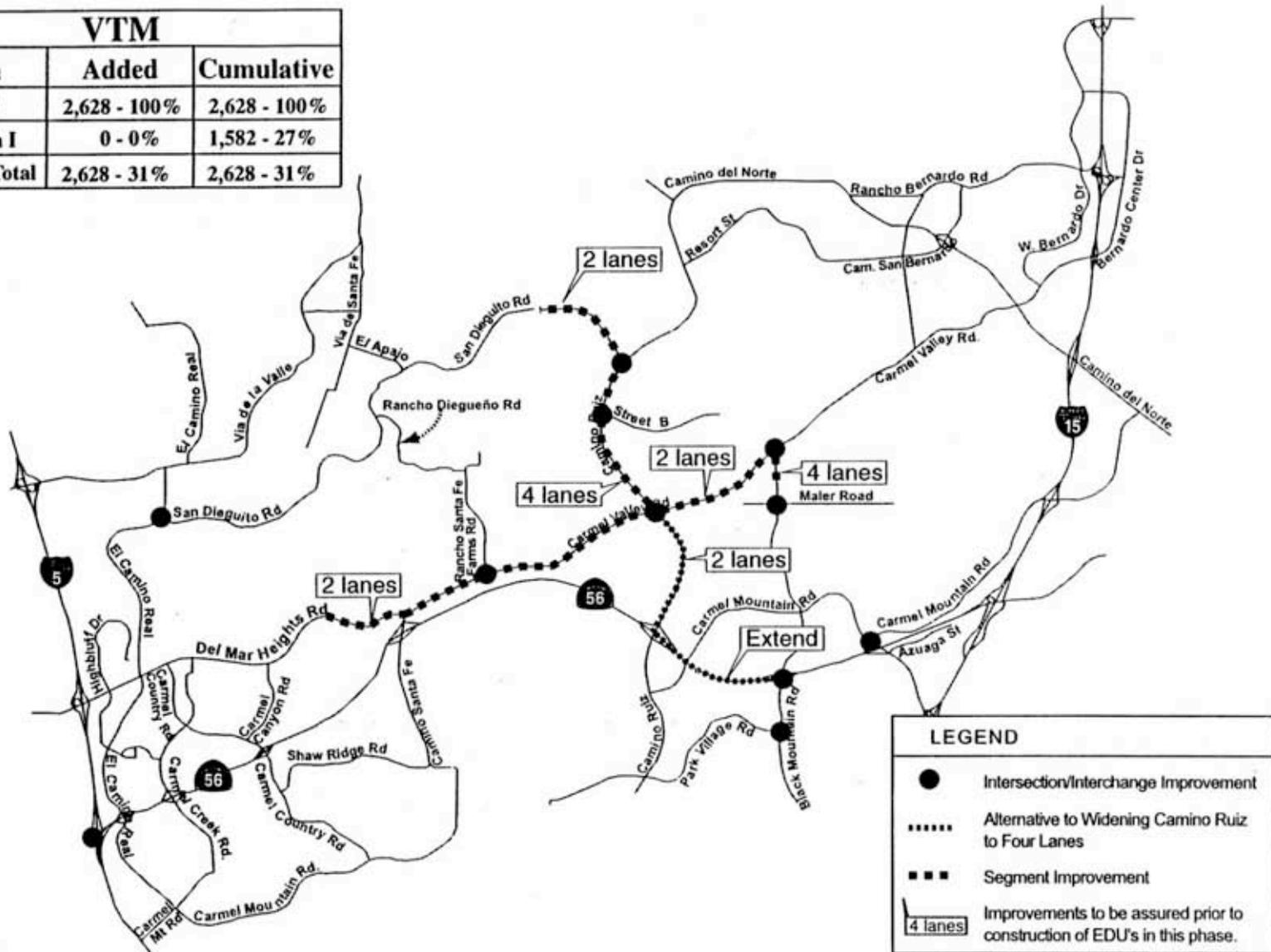
| Facility  | Location   | Required Improvement Description*  |
|---|--|--|
| <b>Black Mountain Ranch Subarea I Phase Three:</b> Prior to exceeding 2,628** equivalent dwelling units in the Vesting Tentative Map area and 3,687 equivalent dwelling units in the remainder of Subarea I (totaling 6,316 equivalent dwelling units in all of Subarea I), the following improvements shall be assured to the satisfaction of the City Engineer: |  |  |
| <b>On-Site Roads</b>  |  |  |
| Camino del Norte  | Eastern project boundary to western project boundary | Construct 4-lane major street.   |
| Camino Ruiz   | Resort Street to Camino del Norte                    | Construct 4-lane major street.   |
| <b>Off-Site Roads</b>   |  |  |
| Bernardo Center Drive   | @ I-15   | Construct ramp improvements  |
| Black Mountain Road   | Twin Trails to north of Mercy Road                   | Widen to 6-lane primary.   |
| Carmel Valley Road  | Black Mountain Drive to Bernardo Center Drive        | Construct 4-lane major.  |
| Camino del Norte  | Eastern project boundary to 4S Parkway               | If not constructed, construct to 4-lane major.                                       |
| Camino del Norte  | @ Bernardo Center Drive                              | Improve capacity at-grade, pedestrian bridge.  |
| Camino del Norte  | 4S Parkway to existing terminus                      | If not complete, construct 6-lane primary.   |
| Camino del Norte  | @ I-15 ramps   | Construct interchange improvements, NB and SB truck climbing lanes.                  |
| Camino Santa Fe   | SR-56 to Carmel Valley Road                          | Widen to 6-lane major street.  |
| Camino Ruiz   | Carmel Mountain Road to Dormouse Road                | Widen to 4-lane major street.  |
| Interstate 5  | Del Mar Heights Road to Birmingham Drive             | Construct improvements (HOV, auxiliary lanes) or comparable improvement to facility. |
| Interstate 15   | SR-56 to Escondido                                   | Construct improvements (HOV, auxiliary lanes) or comparable improvement to facility. |
| Rancho Bernardo Road  | Bernardo Center Drive to West Bernardo Drive         | Widen to 6-lane major.   |
| Rancho Bernardo Road  | @ West Bernardo Drive                                | Construct intersection improvements.   |
| Rancho Bernardo Road  | @ I-15 NB/SB ramps                                   | Construct intersection improvements.   |
| West Bernardo Drive   | @ Bernardo Center Drive                              | Construct intersection improvements.   |
| West Bernardo Drive   | I-15 SB ramps to Aguamiel Road                       | Improve cross section. <sup>1</sup>  |
| West Bernardo Drive   | @ I-15 SB ramp                                       | Construct traffic signal.  |

**Note:** \* Required improvements to be assured to the satisfaction of the City Engineer.

\*\* These 2,628 EDUs are assumed to only be associated with approved land uses defined by the approved VTM.

<sup>1</sup> Improvements to be defined, designed and assured to the satisfaction of the City Engineer.

| VTM           |              |              |
|---------------|--------------|--------------|
| Area          | Added        | Cumulative   |
| VTM           | 2,628 - 100% | 2,628 - 100% |
| Subarea I     | 0 - 0%       | 1,582 - 27%  |
| Subarea Total | 2,628 - 31%  | 2,628 - 31%  |

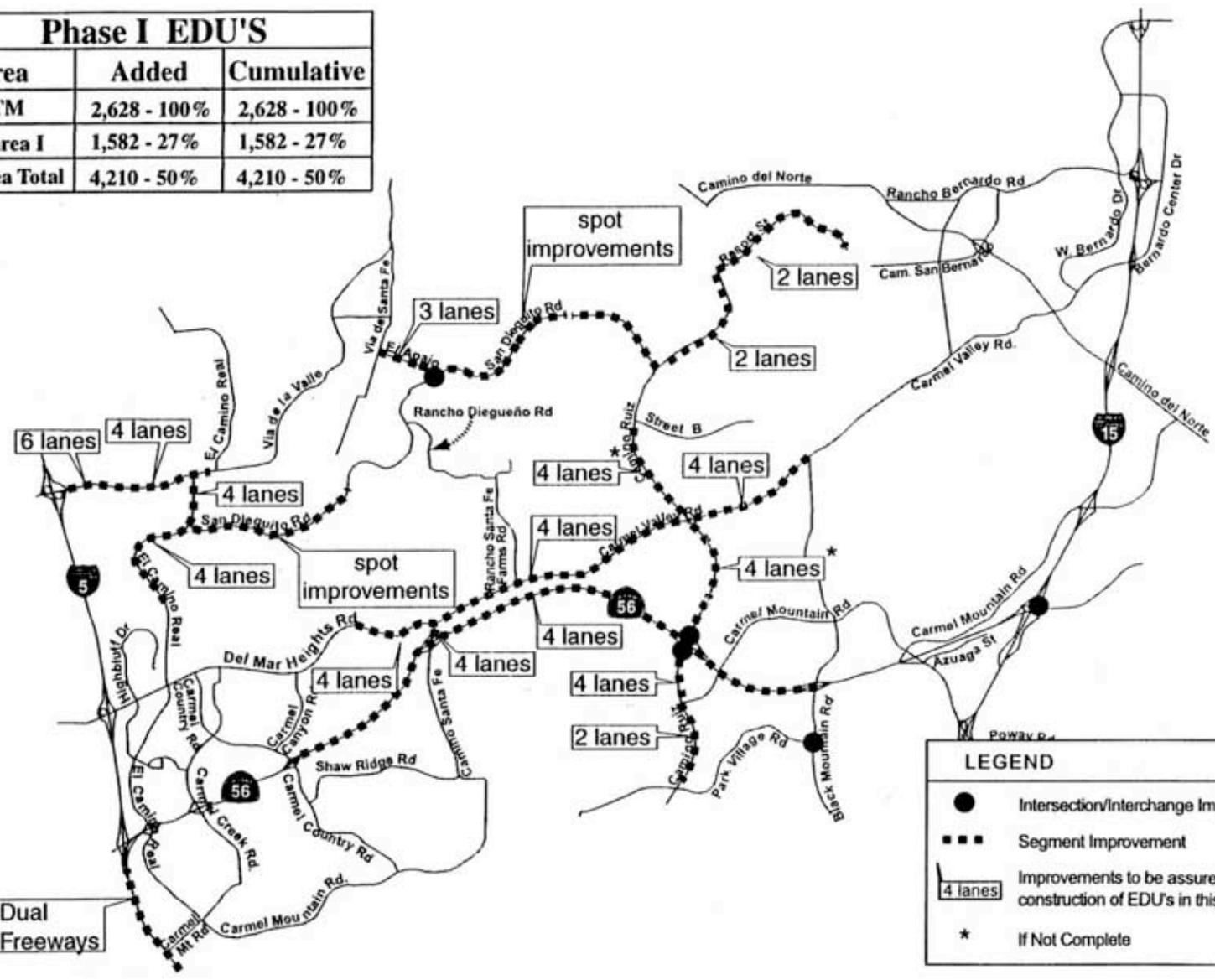


## Circulation Impact Analysis/VTM Circulation Network Improvements

Black Mountain Ranch Subarea Plan



| Phase I EDU'S |              |              |
|---------------|--------------|--------------|
| Area          | Added        | Cumulative   |
| VTM           | 2,628 - 100% | 2,628 - 100% |
| Subarea I     | 1,582 - 27%  | 1,582 - 27%  |
| Subarea Total | 4,210 - 50%  | 4,210 - 50%  |



↑  
Not To Scale



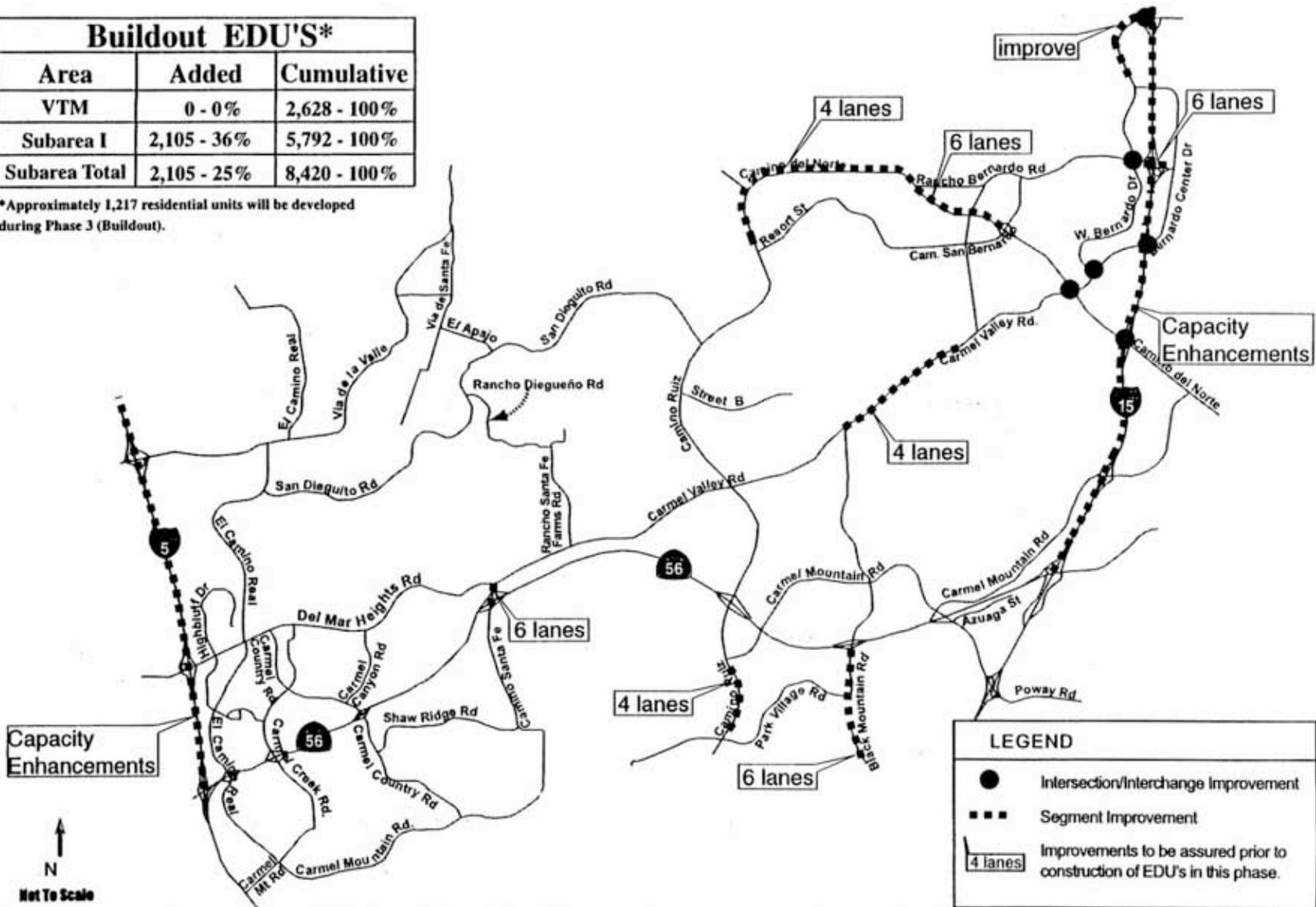
## Circulation Impact Analysis/Phase One Circulation Network Improvements

Black Mountain Ranch Subarea Plan



| Buildout EDU'S* |             |              |
|-----------------|-------------|--------------|
| Area            | Added       | Cumulative   |
| VTM             | 0 - 0%      | 2,628 - 100% |
| Subarea I       | 2,105 - 36% | 5,792 - 100% |
| Subarea Total   | 2,105 - 25% | 8,420 - 100% |

\*Approximately 1,217 residential units will be developed during Phase 3 (Buildout).



### Phase Three - Buildout Circulation Network Improvements

Black Mountain Ranch Subarea Plan

