# San Bruno Mountain Habitat Conservation Plan Amendment Environmental Assessment

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# Acronyms and Abbreviations

| | |
|---|---|
| ABAG | Association of Bay Area Governments |
| ARB | California Air Resources Board |
| Authority | North County Fire Authority |
| BAAQMD | Bay Area Air Quality Management District |
| BESD | Brisbane Elementary School District |
| CDFFP | California Department of Forestry and Fire Protection |
| CNDDB | The California Natural Diversity Database |
| CO | carbon monoxide |
| CPI | Consumer Price Index |
| dB | decibel |
| dBA | A-Weighted Decibel |
| DFG | California Department of Fish & Game |
| EA | Environmental assessment |
| EPA | U.S. Environmental Protection Agency |
| ESA | Federal Endangered Species Act |
| EVA | Emergency vehicle access |
| FEMA | Federal Emergency Management Agency |
| FIRMs | Flood Insurance Rate Maps |
| GVMID | Guadalupe Valley Municipal Improvement District |
| HCP | Habitat Conservation Plan |
| HMP | Habitat Management Plan |
| IA | Implementation Agreement |
| JUHSD | Jefferson Union High School District |
| Level of service | LOS |
| LLC | Limited Liability Corporation |
| LOS | Level of service |
| mgd | Million gallons per day |

| | |
|---|---|
| Mountain | San Bruno Mountain |
| NEPA | National Environmental Policy Act |
| $NO_2$ | Nitrogen dioxide |
| Northeast Ridge | Administrative Parcel 1-07 |
| NWIC | Northwest Information Center of the California Historical Resources Information System |
| Permittees | County of San Mateo and cities of Brisbane, Daly City, and South San Francisco |
| PG&E | Pacific Gas and Electric Company |
| PM10 | Particulate matter less than 10 microns in diameter |
| PM2.5 | Particulate matter less than 2.5 microns in diameter |
| SFBRWQCB | San Francisco Bay Regional Water Quality Control Board |
| SFPUC | San Francisco Public Utilities Commission |
| Sheriff | County's Office of the Sheriff |
| $SO_2$ | Sulfur dioxide |
| Southeast Ridge | Preservation Parcel |
| SSFSC | South San Francisco Scavenger Company |
| UI-NI | Unit I-Neighborhood I |
| UI-NII | Unit I-Neighborhood II |
| UII-NI | Unit II-Neighborhood I |
| UII-NII | Unit II-Neighborhood II |
| USFWS | U.S. Fish and Wildlife Service |
| UST | underground storage tank |
| v/c | Volume to capacity |
| VRP | Visibility-reducing particle |
| VTM | Vesting tentative map |

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Chapter 1
# Purpose and Need for Proposed Action

## 1.1 Introduction

This environmental assessment (EA) was prepared by the U.S. Fish and Wildlife Service (USFWS) pursuant to the National Environmental Policy Act (NEPA). It evaluates the effects of issuing an amendment to an existing incidental take permit (ITP or permit) under Section 10 (a)(1)(B) of the federal Endangered Species Act (ESA) for activities covered by a proposed amendment to the San Bruno Mountain (Mountain) Habitat Conservation Plan (HCP) (San Mateo County 1982, as amended). The County of San Mateo and City of Brisbane are preparing the amendment on behalf of the HCP permittees, which include the County of San Mateo and cities of Brisbane, Daly City, and South San Francisco (the Permittees). The proposed HCP amendment would include the following changes.

- **Revised Operating Program for the Northeast Ridge.** Chapter VII of the HCP would be revised to replace the approved operating program for the Northeast Ridge (the 1989 Vesting Tentative Map [VTM]) to allow for the development of Unit II-Neighborhood II (UII-NII) under a proposed 2007 modification (the 2007 VTM). The reconfiguration would reduce the amount of land to be developed and increase the size and value of Conserved Habitat within the Northeast Ridge, as well as reduce impacts to the Species of Concern covered under the HCP.
- **Supplementary Funding.** Section V.B of the HCP would be amended to address supplemental funding of four million dollars to be provided by the developer, Brookfield Northeast Ridge II LLC, concomitant to development of UII-NII within the Northeast Ridge. These funds would establish an HCP Endowment, which would be funded incrementally upon the granting of final map approval for the lots in UII-NII, pursuant to an agreement between Brookfield Northeast Ridge II LLC and the City of Brisbane. The HCP Endowment would be managed by the Trustees and would be available to fund ongoing habitat management and monitoring activities described in the Habitat Management Plan (HMP). Section V.B would also be amended to increase the annual charge per dwelling unit and per 1,000 feet of floor area for commercial and industrial activities within the portion of the HCP area under the City of Brisbane’s jurisdiction. All funds from the annual charge would be part of the HCP's Trust Fund and managed by the Trustees.

- **Addition of Callippe Silverspot and Bay Checkerspot to ITP.** The existing ITP authorizes take coverage for the mission blue butterfly (*Icaricia icarioides missionensis*), the San Bruno elfin butterfly (*Incisalia mossii bayensis*), and the San Francisco garter snake (*Thamnophis sirtalis tetrataenia*). Section V.G of the HCP would be amended to propose the addition of the federally endangered callippe silverspot butterfly (*Speyeria callippe callippe*) and the federally threatened bay checkerspot butterfly (*Euphydryas editha bayensis*) to the list of species covered by the existing ITP. This addition would allow the use of more effective vegetation management techniques to protect butterfly habitat, and cover the revised operating program on the Northeast Ridge.

Issuance of amendment to the existing Section 10 ITP constitutes a discretionary federal action by USFWS and is thus subject to NEPA, which requires that all federal agencies assess the effects of its action on the human environment.

# 1.2 Background

San Bruno Mountain is located on the northern San Francisco Peninsula, just south of the San Mateo-San Francisco County boundary. The Mountain is surrounded on all sides by the cities of Colma to the west, Daly City to the north, Brisbane to the east, and South San Francisco to the south. Figure 1-1 shows the regional location. The San Bruno Mountain HCP study area consists of 3,537 acres, of which 2,828 acres are presently Conserved Habitat. Figure 1-2 shows the HCP boundaries.

## Permit History

The original San Bruno Mountain HCP was completed in November 1982 and the USFWS issued a 30-year ITP to the Permittees on March 4, 1983. That permit (PRT 2-9818) expires on March 4, 2013, unless it is renewed. The proposed HCP amendment would not affect the duration of the existing permit nor would it add or remove any permit holders.

Since adoption of the HCP, approximately 308 acres of the Mountain have been developed. Additionally, 40.0 acres are planned for development (under the 1989 Northeast Ridge VTM) and another 276 acres remain unplanned (most in the Quarry and Brisbane Acres). Approximately 2,828 acres have been dedicated as Conserved Habitat, in addition to 84 acres that have been graded and restored. The Conserved Habitat includes both undisturbed and restored lands that have been dedicated as State and County parklands, as well as DFG lands that are managed through the HCP under cooperative agreements. Figure 1-3 shows the existing developed and protected lands on the Mountain.

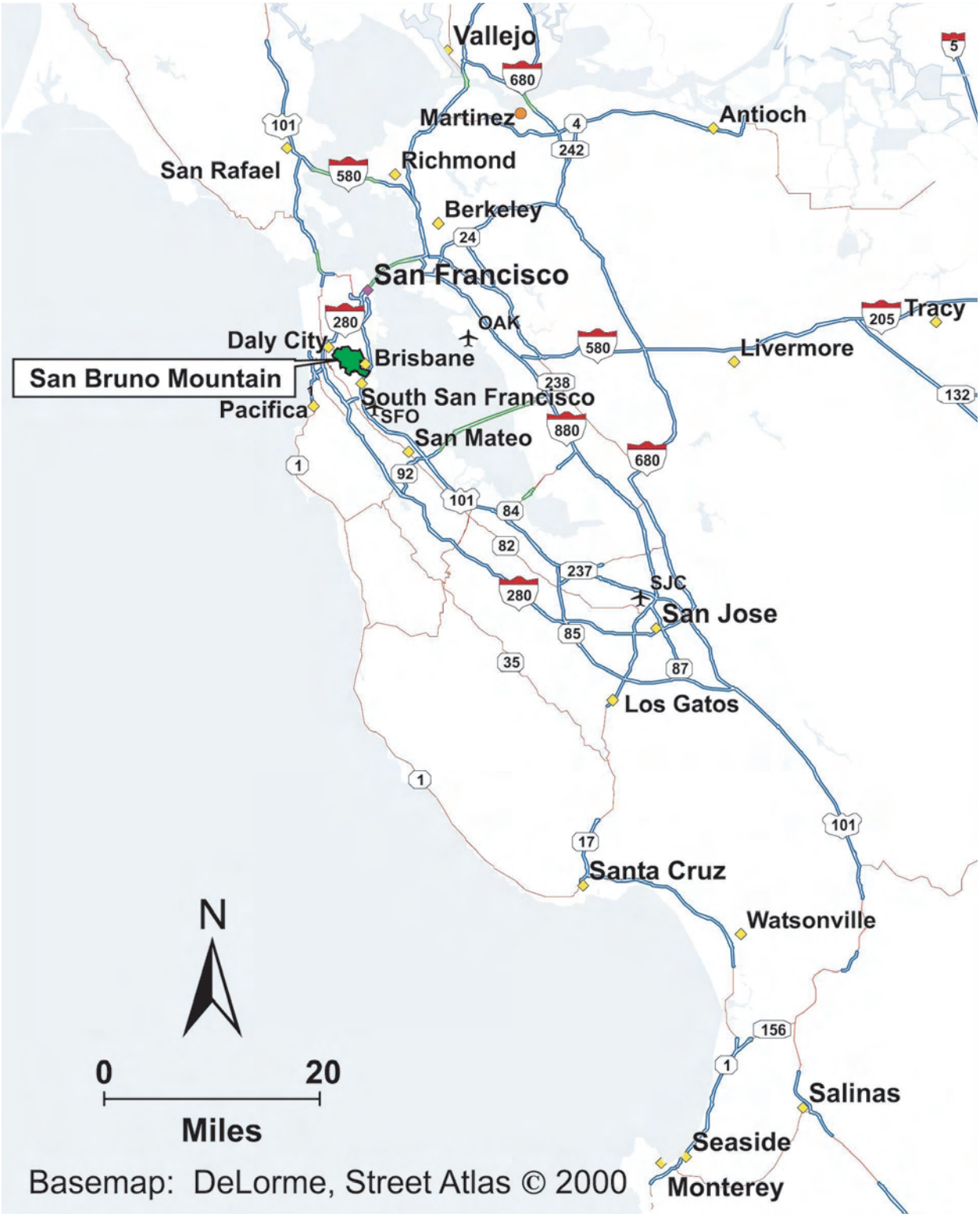


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**Figure 1-1**
**Regional Location**

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Source: TRA Environmental Sciences

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**Figure 1-2**
**San Bruno Mountain Habitat Conservation Plan Boundary**

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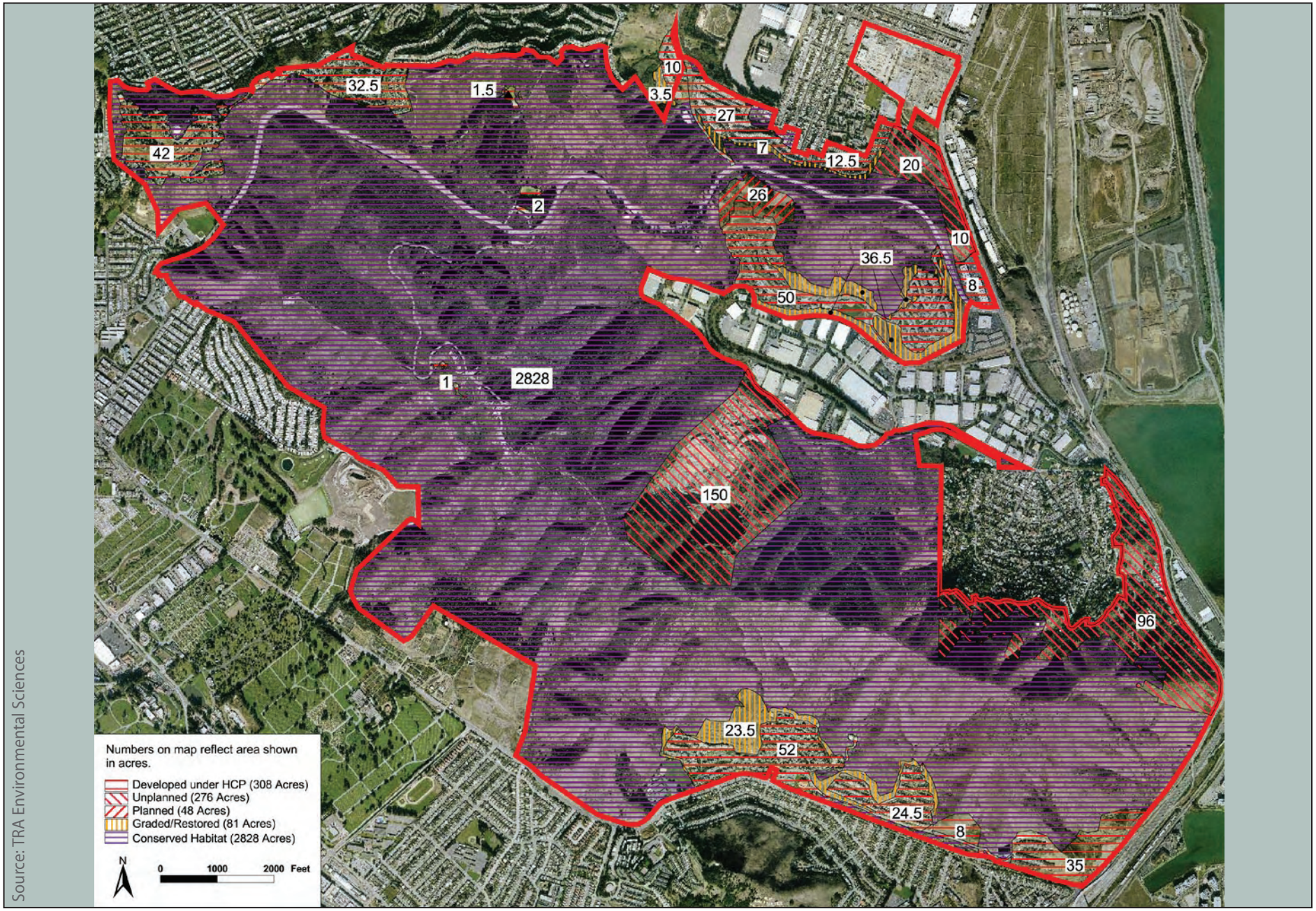


Source: TRA Environmental Sciences

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**Figure 1-3**
**HCP Acreage Distribution**

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Prior HCP amendments include the following.

1. The County of San Mateo applied for the "South Slope Geotechnical Amendment" on June 24, 1985. The SBM HCP was first amended August 30, 1985, in response to the application, which included the January 1985 Supplemental EIR/EA, the June 1985 Biological Study of the Amendment, and the June 1985 Addendum to the Supplemental EIR/EA.
2. The County of San Mateo also applied for the "Rio Verde Heights Amendment" on June 24, 1985. The SBM HCP was amended on December 24, 1985, for activities related to Rio Verde Heights. The application included the January 1985 Supplemental EIR/EA, the June 1985 Biological Study of the amendment, and the subsequent September 1985 Addendum to the Supplemental EIR/EA.
3. The County of San Mateo also applied for the "County Park (Colma Dump) Amendment" on June 24, 1985. The USFWS denied the request for the amendment on December 30, 1985. However, the County appealed the denial on February 25, 1986, USFWS asked for more information, the County offered changes and additions to their project, and the USFWS reversed their denial and amended the permit ("County Park Amendment") on June 19, 1986.
4. The City of Brisbane applied for the "Northeast Ridge Project Equivalent Exchange Amendment" on February 2, 1990. In response to the application, the SBM HCP was last amended on August 27, 1990 to reconfigure conservation and development areas within Administrative Parcel 1-07. The application included an 1989 Addendum to the Final EIR and 1989 Supplement to the EA.

## Permit Boundary

The existing ITP covers 3,537 acres of San Bruno Mountain, which includes 36 separate ownership parcels. The HCP amendment would not change the overall permit boundary, but it does change the area planned for development in Administrative Parcel 1-07. The HCP amendment describes the reconfiguration of lands on the Northeast Ridge for development and conservation, and the construction of 71 new single-family housing units in UII-NII. Figure 1-4 shows the Northeast Ridge site plan. This revised Northeast Ridge development plan would result in a reduction in housing development by 80 single-family units and a net increase of 20.36 acres of Conserved Habitat over existing development authorizations (the 1989 VTM).

The amended ITP would authorize the HCP amendment reconfiguration of the Northeast Ridge development plan for take of all existing Species of Concern (see below). Additionally, the HCP amendment proposes that the USFWS add the callippe silverspot and bay checkerspot to the ITP's list of Species of Concern covered for potential take associated with the development of the Northeast Ridge and ongoing vegetation management and monitoring activities across the Mountain.

## Species Covered by the Existing HCP and ITP

The original HCP's list of Species of Concern includes the mission blue butterfly (*Icaricia icarioides missionensis*), San Bruno elfin butterfly (*Incisalia mossii bayensis*), bay checkerspot butterfly (*Euphydryas editha bayensis*), callippe silverspot butterfly, San Francisco tree lupine moth (*Grapholitha edwardsiana*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), and solitary bee (*Dufourea stagei*), as well as many rare and endemic plants, and plants that function as host or larval food plants for the butterflies.

However, the existing ITP authorizes take coverage only for the federally listed mission blue butterfly, San Bruno elfin butterfly, and San Francisco garter snake. Conservation needs for the callippe silverspot and bay checkerspot butterflies were addressed in the HCP, but were not covered by the ITP because neither species was listed at the time. Because of its rarity, incidental take authorization of the San Bruno elfin butterfly on certain administrative parcels was not granted, but would require an amendment to the ITP.

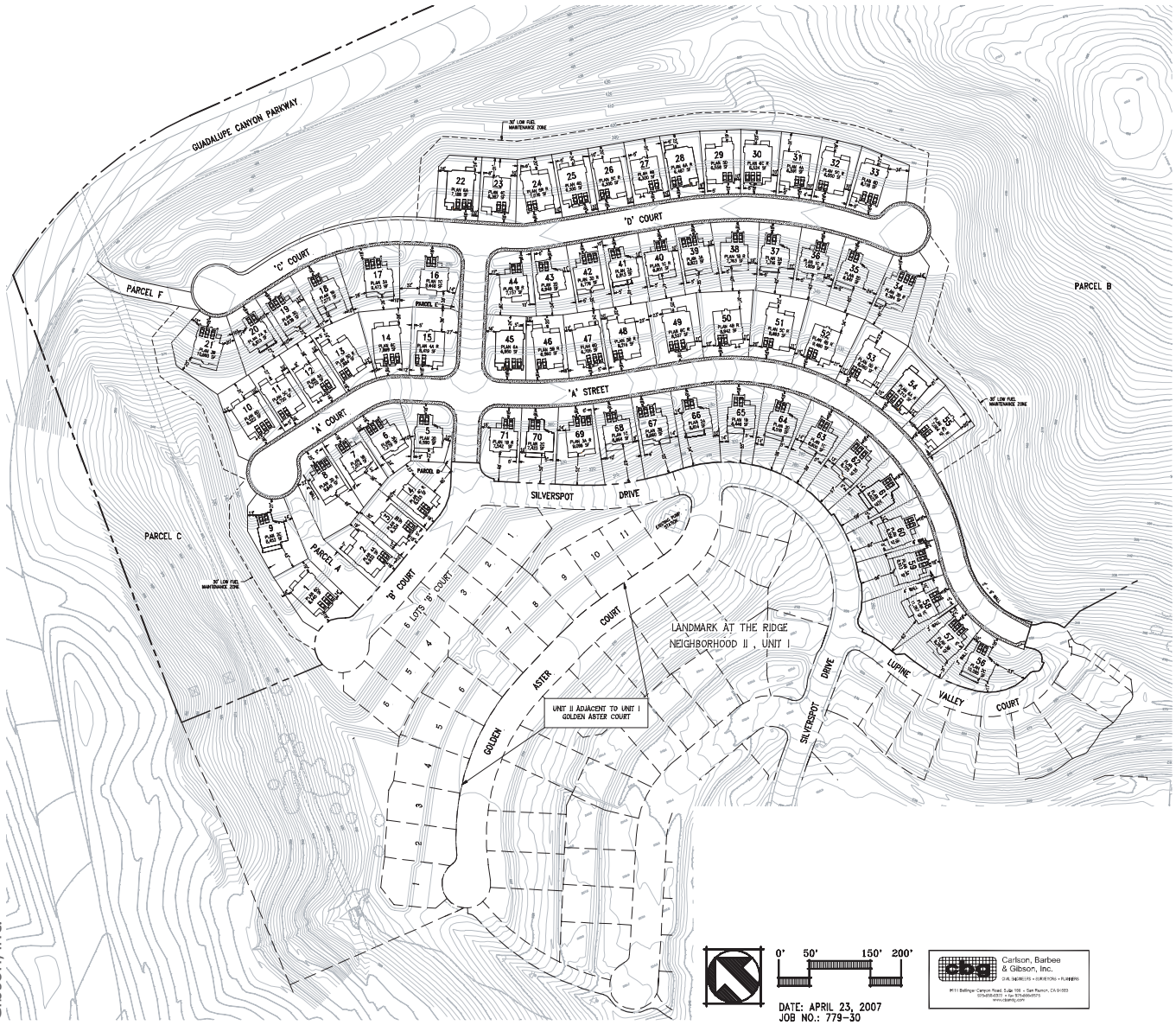
# 1.3 Proposed Action Addressed in this EA

## Definition of Proposed Action

The Proposed Action consists of the USFWS' decision on the issuance of an amendment to an existing Section 10 ITP for activities covered by a proposed amendment to the San Bruno Mountain HCP. As described above, the proposed HCP amendment would include a revised operating program for the Northeast Ridge; provision of supplementary funding; and a proposal to add the callippe silverspot and bay checkerspot to the ITP.

The specific project or activities that trigger the need for issuance of an amendment to the existing ITP to add the callippe silverspot and bay checkerspot to the list of covered species are listed below. These activities may physically disturb, harm, or harass the endangered butterflies and are therefore analyzed in *Chapter 4 Environmental Consequences*.

- **Reconfiguration of the Northeast Ridge.** Development under the 2007 VTM would include grading of 19.64 acres of undisturbed land for UII-NII; dedication of 20.36 acres of Conserved Habitat; construction, use, and maintenance of 71 single-family detached home lots; landscaping and maintenance of common areas; installation, operation, and maintenance of required public and association-owned infrastructure; and monitoring as required for these features.
- **Management and Monitoring of Conserved Habitat.** Provision of supplementary funding by Brookfield Northeast Ridge II LLC would enhance vegetation management and monitoring activities on Conserved Habitat. Improved management would emphasize control of thatch build-up and non-native species invasion for the benefit of the Species of Concern.




Source: Carlson, Barbee & Gibson, Inc.

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**Figure 1-4**
**2007 Site Plan, Northeast Ridge**

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The *Biological Study and Analysis of Conserved Habitat for Amendments to the Habitat Conservation Plan for San Bruno Mountain and Incidental Take Permit PRT 2-9818* is included as Appendix A to this EA. The *2007 Habitat Management Plan* is included as Appendix B to this EA.

## Callippe Silverspot Butterfly

The Proposed Action includes addition of the callippe silverspot to the ITP. The callippe silverspot butterfly was proposed for listing in 1991, a proposed rule was published in 1994, and a final rule listing the species as endangered was published on December 5, 1997.

The callippe silverspot's host plant is the native viola (also called Johnny jump-up) (*Viola pedunculata).* The callippe silverspot occurs in areas where the butterfly's larval host plant is located, where adult nectar plants are present, and on ridges and hilltops where courtship and mating take place. On San Bruno Mountain, there are two population centers of the callippe silverspot (the Southeast Ridge and Northeast Ridge), but adults regularly disperse between them. Some adult callippe silverspot also disperse from San Bruno Mountain to Sign Hill, and vice versa (USFWS 2006).

## Bay Checkerspot Butterfly

The Proposed Action includes addition of the bay checkerspot to the ITP. The bay checkerspot butterfly was listed as a federal threatened species in 1987. A recovery plan for serpentine soil species was adopted in September 1998.

The bay checkerspot's host plants are the California plantain (*Plantago erecta*) and owl's clover (*Castilleja densiflora*). Approximately 748 acres of the Mountain are designated Critical Habitat for the bay checkerspot, situated mostly within San Bruno Mountain State and County Park. This unit is currently unoccupied by the bay checkerspot. The butterfly appears to have been extirpated from the Mountain, as no individuals have been observed since 1984. However, the USFWS has determined that since the unit has supported a population of the animal in the recent past, it is reasonable to expect that the species can be reestablished here (USFWS 2006).

## Purpose of Proposed Action

The purpose of the Proposed Action is to:

- Respond to the Permittee's application for an amendment to the existing ITP for the callippe silverspot and bay checkerspot related to activities that have the potential to result in take, pursuant to the ESA section 10(a)(1)(B) and its implementing regulations and policies;
- Protect, conserve, and enhance the long-term survival of the Species of Concern, including the callippe silverspot and bay checkerspot, and their habitat for the continuing benefit of the people of the United States;
- Provide a means and take steps to conserve the ecosystems used by the Species of Concern, including the callippe silverspot and bay checkerspot; and
- Ensure compliance with the ESA and NEPA.

Under the Amendment, the Permittees will continue to implement the measures set forth in the HCP to minimize and mitigate the impacts of permitted activities on both listed and nonlisted species.

## Need for Proposed Action

The Proposed Action is necessary because the callippe silverspot and bay checkerspot were listed after the issuance of the existing ITP and activities proposed by the Permittees could now result in take of of these species. Issuance of an amendment to the existing ITP will allow the implementation of the amended HCP in compliance with the ESA.

# 1.4 Criteria for Issuance of Permit

The ESA was amended in 1982 to add a provision in Section 10 that allows for the incidental take of listed species by non-federal entities. Because the timing of the final execution of the 1983 HCP occurred during the period of time between the end of the public comment period on the draft regulations regarding the processing and issuance of Section 10(a)(1)(B) permits and the issuance of the final regulations, the amendments discussed in this document are being considered in accordance with the provisions of the 1983 HCP and its accompanying *Agreement with Respect to the San Bruno Mountain Habitat Conservation Plan* (Implementing Agreement). Pursuant to the Implementing Agreement, the Permittees are providing a biological study of the proposed amendments to the HCP. The changes proposed in the amendments are being considered following the amendment procedures outlined in the 1983 HCP, specifically the "Amendments for Exchange of Equivalent Conserved Habitat Prior to Grading" and "All Other Amendments" procedures in section V.F. of the HCP, and reiterated in section IX of the Implementing Agreement.

The USFWS, however, also intends to ensure that the substantive elements of Section 10[a][2][B] and implementing regulations (50 CFR 17.32[b][2][i]) are adequately addressed in its determination for issuance of the amended ITP. These criteria include the following findings.

- The take will be incidental to otherwise lawful activities.
- The applicant will minimize and mitigate the impacts of the take to the maximum extent practicable.
- The applicant will ensure adequate funding for the conservation plan and procedures to deal with unforeseen circumstances.
- The take will not appreciably reduce the likelihood of the survival and recovery of the species in the wild.
- The measures required by the USFWS, if any, will be met.
- The USFWS has received any other assurances it requires that the HCP will be implemented.

Based on the above considerations, the USFWS may choose from the following:

1. Issue a permit amendment conditioned on implementation of the 1983 HCP as amended;
2. Issue a permit amendment conditioned on implementation of the 1983 HCP as amended, and as submitted together with other measures specified by the USFWS; or
3. Deny the permit amendment.

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Chapter 2

# Description of Alternatives, Including the Proposed Action

As referenced in CEQ's NEPA regulations regarding the contents of an EA (40 CFR 1508.9(b)), NEPA Section 102[2][E] requires federal agencies to develop, study, and briefly describe alternatives to any proposed action with the potential to result in unresolved resource conflicts. This chapter describes the alternatives evaluated by USFWS, including the alternatives evaluated in detail in this EA (the Proposed Action, the 1989 Northeast Ridge Plan Alternative, and the No Action Alternative).

## 2.1 Alternatives Development Process

The Northeast Ridge has been a planned parcel since the HCP was completed in 1982. Figure 2-1 shows the location of the Northeast Ridge on the Mountain. The City of Brisbane approved a VTM in 1982 for development of 1,250 residential units within the Northeast Ridge. The City approved a revised VTM in 1989 that reduced the total number of dwelling units to 579, and the USFWS and the California Department of Fish & Game (DFG) approved an Equivalent Exchange Amendment for this revised design in 1990. Figure 2-2 shows the 1989 VTM.

Consistent with these approvals, portions of the Northeast Ridge were developed. The first development phase included 428 dwelling units and community facilities. Development of the first phase [Unit I-Neighborhood I (UI-NI), Neighborhood II (UI-NII), and Neighborhood III (UI-NIII)], which is substantially built and occupied, permanently disturbed 66.99 acres.In 2006 and 2007, the City of Brisbane and the USFWS agreed that Brookfield Northeast Ridge II LLC could proceed with development of 17 single-family residential units north of Unit I that had been disturbed by previous grading, roadway and infrastructure grading, and slope stabilization measures. The remaining 66.39 acres of Unit 1 were dedicated as Conserved Habitat. As approved under the 1989 VTM, the second phase would include development of two additional neighborhoods [Unit II-Neighborhood I (UII-NI) and Neighborhood II (UII-NII)] for a total of 168 dwelling units. UII-NI included 108 units and UII-NII included 60 units, for a total of 25.60 acres of permanently disturbed area. However, if Brookfield Northeast Ridge II LLC were to process an application to develop Unit II under the 1989 VTM, it would not include the 17 housing units

transferred to Unit I. The remaining 69.34 acres of Unit II were to be dedicated as Conserved Habitat.

Development of the remaining dwelling units requires an amendment to both the HCP and the existing ITP for take authorization for the callippe silverspot. The Northeast Ridge does not contain designated Critical Habitat for the bay checkerspot. The USFWS, the City of Brisbane, and Brookfield Northeast Ridge II LLC have been working together since 1997 (when the callippe silverspot was listed) to reconfigure the development plan to further avoid, minimize, and mitigate the potential impacts of the final phase of Northeast Ridge development. The revised 2007 VTM minimizes potential impacts to the callippe silverspot and its host plant, the native viola. The Proposed Action is the result of this collaboration.

The alternatives under consideration in this EA include the following.

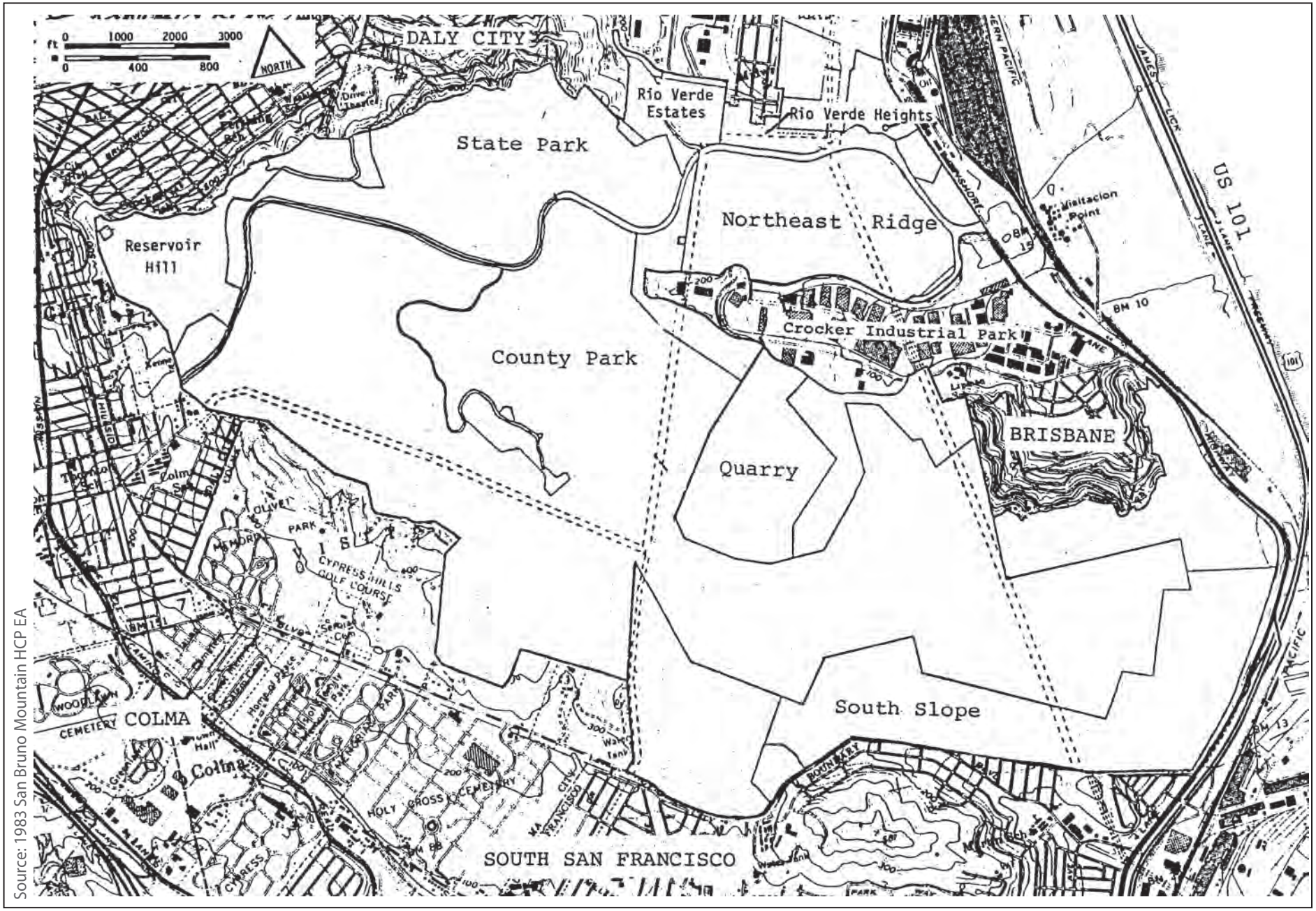
1. **Alternative 1—Proposed Action**: Issuance of an amendment to the existing ITP to add take coverage for the callippe silverspot and bay checkerspot butterflies for an HCP amendment which includes 1) reconfiguration of the Northeast Ridge development plan and Conserved Habitat per the 2007 VTM and 2) enhanced vegetation management and monitoring activities on Conserved Habitat due to supplementary funding.
2. **Alternative 2—1989 Northeast Ridge Plan**: Issuance of an amendment to the existing ITP to add take coverage for the callippe silverspot and bay checkerspot for the adopted HCP, which includes the 1989 VTM for Northeast Ridge and continuation of habitat management activities under the existing funding program. Vegetation management is presumed to occur in areas of butterfly habitat per authorization for take of the callippe and bay checkerspot.

- **Alternative 3—No Action**: No issuance of an amendment to the existing ITP to add take coverage for the callippe silverspot and bay checkerspot, and therefore rejection of the proposed reconfiguration of the Northeast Ridge and supplementary funding for vegetation management on the Mountain. Certain types of habitat management would continue to be prohibited in areas of butterfly habitat due to lack of take authorization.

# 2.2 Alternatives Analyzed in this EA

## Alternative 1—Proposed Action

The Proposed Action consists of USFWS issuance of an amendment to an existing Section 10 ITP for activities covered by a proposed amendment to the San Bruno Mountain HCP. As described in *Chapter 1 Introduction*, the proposed HCP amendment would include a revised operating program for the Northeast Ridge; provision of supplementary funding; and a proposal for the addition of the callippe silverspot and bay checkerspot to the ITP.




Source: 1983 San Bruno Mountain HCP EA

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**Figure 2-1**
**Northeast Ridge Parcel**

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Source: Carlson, Barbee & Gibson, Inc

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**Figure 2-2**
**1989 Tentative Map, Northeast Ridge**

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The specific project or activities that trigger the need for issuance of an amendment to the existing ITP to add the callippe silverspot and bay checkerspot to the list of covered species are listed below. These activities may physically disturb, harm, or harass the endangered butterflies and are therefore analyzed in *Chapter 4 Environmental Consequences*.

- **Reconfiguration of the Northeast Ridge.** Development under the 2007 VTM would include grading of 19.64 acres of undisturbed land for UII-NII; dedication of 20.36 acres of Conserved Habitat; construction, use, and maintenance of 71 single-family detached home lots; landscaping and maintenance of common areas; installation, operation, and maintenance of required public and association-owned infrastructure; and monitoring as required for these features.
- **Management and Monitoring of Conserved Habitat.** Provision of supplementary funding by Brookfield Northeast Ridge II LLC would enhance vegetation management and monitoring activities on Conserved Habitat. Improved management would emphasize control of thatch build-up and non-native species invasion for the benefit of the Species of Concern.

## Reconfiguration of the Northeast Ridge

Administrative Parcel 1-07 (the Northeast Ridge) covers 228 acres located in the northeast corner of San Bruno Mountain. It is bounded on the south by the Crocker Industrial Park, on the north and east by Guadalupe Canyon Parkway, and on the west by a PG&E transmission line (refer to Figure 2-1). It has a hilly terrain that supports four vegetation types: annual grassland, coastal scrub, riparian/wetland, and introduced exotics. Approximately 90% of the site is annual grassland. Existing land uses surrounding the Northeast Ridge include single-family neighborhoods across Guadalupe Canyon Parkway to the north; undeveloped open space to the east; multi-family residential development to the south; and the State and County Park to the west.

### 2007 Northeast Ridge VTM

The 2007 Northeast Ridge development has been substantially modified from the 1989/1990 approvals. The HCP amendment proposes to authorize the 2007 VTM, which would include 71 single-family homes in UII-NII. Under the 2007 VTM, the 228.3-acre parcel would contain 144.7 acres of Conserved Habitat for the Species of Concern and 83.7 acres of development. Table 2-1 provides an overview of the 2007 VTM acreages.

In 2006, the City of Brisbane and USFWS agreed that Brookfield Northeast Ridge II LLC could proceed with development of 11 single-family residential units on 5.67 acres north of Unit I that had been disturbed by the remedial grading required for the earlier phase of development. Because the area had been previously impacted and no longer contained potentially suitable habitat for the callippe silverspot or bay checkerspot, no take authorization was required, and

these homes and associated infrastructure are currently under construction. In 2007, the City and USFWS further determined that roadway construction, infrastructure installation, and slope stabilization measures needed for public health, safety and welfare reasons required grading of an additional 1.07 acre area north of Unit I (referred to as "infrastructure grading"). The City and USFWS agreed that 6 additional housing units could be constructed on this previously undisturbed area outside the HCP fence location at that time. The total 17 housing units considered 'transferred' to Unit I comprise a 6.74-acre area. This EA evaluates potential impacts to the callippe silverspot and its habitat on the 1.07 acre infrastructure grading site.

**Table 2-1.** 2007 VTM Area Summary

| | Unit I (acres) | Unit II (acres) | Total (acres) |
|---|---|---|---|
| Conserved Habitat | 66.39 | 78.27 | 144.66 |
| Development Area | 66.99 | 16.67 | 83.66 |
| Total Acreage | 133.38 | 94.94 | 228.32 |

Note: Unit I includes the 17 units under construction on the previously disturbed and infrastructure grading areas.

Figure 2-3 shows the 2007 VTM. Figure 2-4 provides a graphic comparison and Table 2-2 provides an acreage comparison of the two VTMs.

The 2007 VTM would permanently disturb 16.67 acres, with an additional 2.97 acres temporarily disturbed and subsequently revegetated. UII-NI would be left undeveloped and would be dedicated as Conserved Habitat. The USFWS, the City, and Brookfield Northeast Ridge II LLC conferred on a plan to redesign UII-NII to avoid high quality callippe silverspot habitat along the western boundary and to transfer 28 units from UII-NI to UII-NII. After completion of construction, UII-NII would include 71 single-family homes. As a result, UII-NII would increase in size by 4.97 acres, but the additional impacts would occur in a eucalyptus (*Eucalyptus globulus)* grove and areas previously designated for temporary disturbance and restoration. The 2007 VTM would result in a net increase of 8.93 acres of Conserved Habitat over the 1989 VTM. Brookfield Northeast Ridge II LLC also proposes to provide supplemental funding for the HCP, as described below.

Source: Carlson, Barbee & Gibson, Inc.

0049.07 EA (04-07)

Jones & Stokes

**Figure 2-3**
**2007 Tentative Map, Northeast Ridge**

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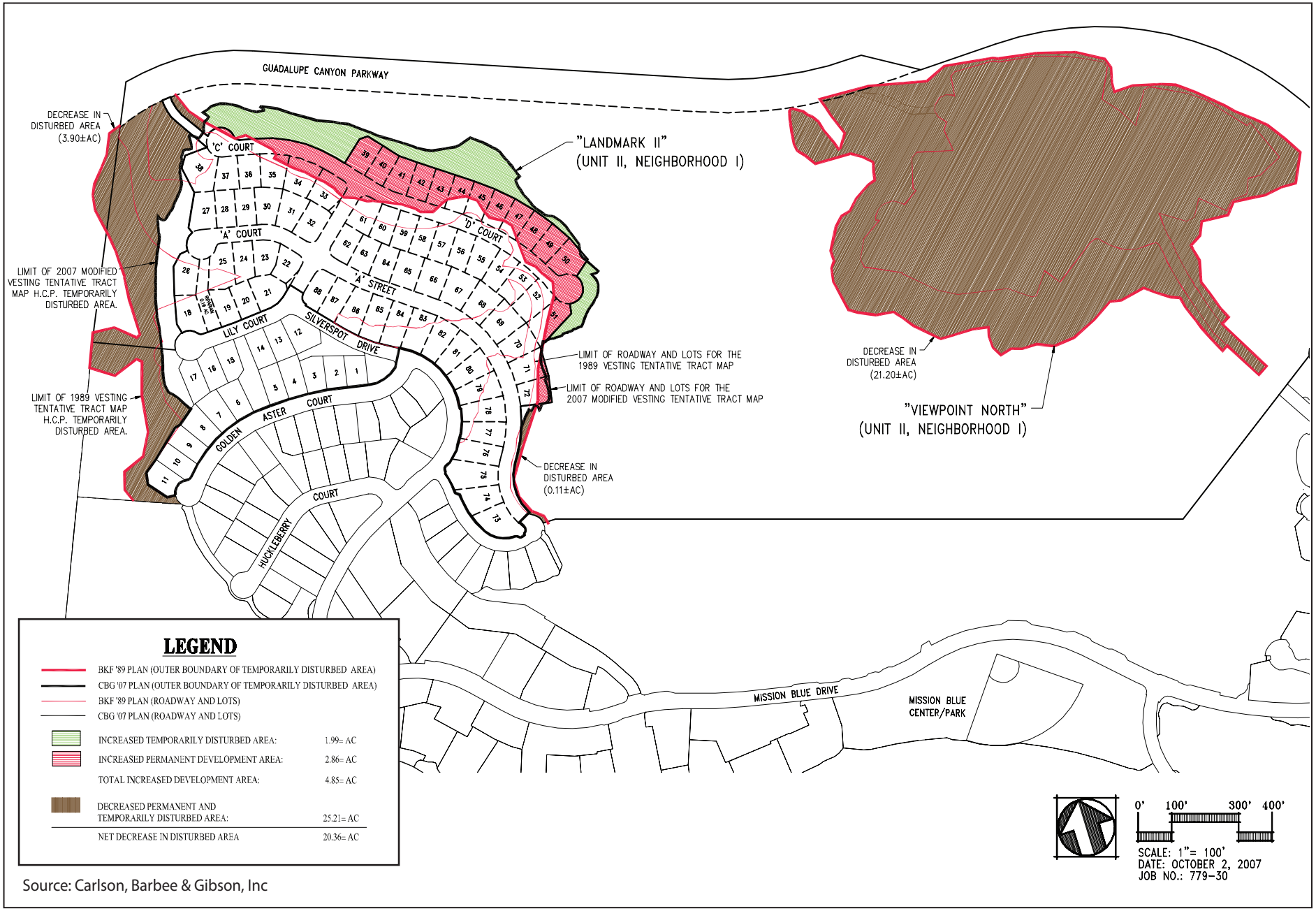


Source: Carlson, Barbee & Gibson, Inc

0049.07 EA (10-07)

Jones & Stokes

**Figure 2-4**
**1989-2007 Comparison, Northeast Ridge**

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**Table 2-2.** Comparison of Total Land Conversion in 1989 and 2007 Northeast Ridge VTMs, Unit II

| Disturbance Area | 1989 VTM (acres) | | | 2007 VTM (acres) | | | Difference (1989 to 2007) |
|---|---|---|---|---|---|---|---|
| | UII-NI | UII-NII | Total | UII-NI | UII-NII | Total | Total |
| Permanent | 13.90 | 11.70 | 25.60 | 0.00 | 16.67 | 16.67 | -8.93 |
| Temporary/ Restored | 7.30 | 7.10 | 14.40 | 0.00 | 2.97 | 2.97 | -11.43 |
| Total | 21.20 | 18.80 | 40.00 | 0.00 | 19.64 | 19.64 | -20.36 |

Note: Acreage does not include the areas in Unit I disturbed by the 2007 infrastructure grading.

The 2007 VTM covers the final phase of development of Administrative Parcel 1-07-02, including the following activities.

- Grading of 19.64 acres of undisturbed area for UII-NII, including 16.67 acres that would be permanently disturbed and 2.97 acres that would be disturbed temporarily and then revegetated pursuant to HCP criteria.
- Dedication of 78.27 acres of Conserved Habitat, including the 2.97 acres that would be disturbed temporarily and then restored.
- Construction, use, and maintenance of 71 single-family detached home lots.
- Landscaping and maintenance of common areas, including revegetation and management of temporarily disturbed areas and installation and maintenance of fuel management zones.
- Installation, operation, and maintenance of required public or association-owned infrastructure, sidewalks, community fencing or walls, streetlights, traffic signs and signals, drainage facilities (including concrete v-ditches), and utilities (including, but not limited to, water, sewer, electricity, gas, telephone, and cable).
- Construction and use of the public emergency vehicle access (EVA).
- Removal of portions of the existing eucalyptus grove (6.82 acres).
- Monitoring required for the installation, construction, or operation of any of the features described above.

The fuel modification zone, which would be owned and maintained by the HCP Operator, would be vegetated, to the extent practicable, with native plants that do not present an invasive threat to the adjacent grasslands within the future Conserved Habitat. Portions (approximately 0.41 acres) of the fuel modification zone extend into otherwise undisturbed areas. The Northeast Ridge homeowners associations may conduct additional maintenance of the fuel modification zone through removal of wooded material within 30 feet of adjacent lots. Concrete V-ditches would be installed on the graded slopes within the fuel modification zone to convey stormwater runoff. These facilities would also be maintained by the Plan Operator, but are not expected to require frequent maintenance. The

Northeast Ridge homeowner's association would fund the required maintenance, per an agreement with the City.

The primary access to UII-NII would be from the south via existing streets in the adjacent UI-NII. The EVA, approximately 20 feet wide and 180 feet long, would connect the northern corner of the community ("C" Court) to Guadalupe Canyon Parkway. Access to this EVA, which would be concrete, would be limited by locked gates to emergency vehicles only.

Portions of the perimeter of UII-NII may have a 4-foot catchment wall where lots and roadways are adjacent to the HCP open space. These areas may include a portion of "C" Court in the northern tip of the development and the easterly edge of "A" Street in the southern end of the development. The final design of the catchment walls are subject to the City Engineer's approval of the grading and improvement plans, at the time of or just prior to final map approvals.

The Northeast Ridge currently contains a 7.85-acre eucalyptus grove. Existing approvals related to the 1989 VTM require removal and thinning of these trees, which has been delayed due to the listing of the callippe silverspot. Construction of the proposed 2007 VTM would permanently remove 6.82 acres of eucalyptus trees; 1.02 acres would remain in Conserved Habitat and be thinned (minimum of 45-feet between trees) by Brookfield Northeast Ridge II LLC. This is an increase of 2.1 acres of tree removal as compared to the 1989 VTM (from 4.7 acres under the 1989 VTM to 6.8 acres under the 2007 VTM).

## Conserved Habitat

Reductions in the size of the Northeast Ridge development area increase the size of the Conserved Habitat. Under the 2007 VTM, the 228.3-acre parcel would contain 144.7 acres of Conserved Habitat for the Species of Concern. The Conserved Habitat area contains a diversity of habitat types (including prominent hilltops, various slope orientations, etc.), is contiguous with other Conserved Habitat areas off-site, and contains corridors between larger Conserved Habitat areas on-site.

Under the 2007 VTM, approximately 78.27 acres in Unit II would be granted to the Plan Operator as Conserved Habitat. The 2007 VTM would increase undisturbed Conserved Habitat by 20.36 acres and would result in a net increase in Conserved Habitat by 8.93 acres, namely because UII-NI would not be constructed. Table 2-3 provides a comparison of Conserved Habitat acreages in Unit II.

**Table 2-3.** Comparison of Conserved Habitat in 1989 and 2007 Northeast Ridge VTMs, Unit II

| | 1989 VTM (acres) | 2007 VTM (acres) | Difference (2007 to 1989) |
|---|---|---|---|
| Conserved Habitat | 69.34 | 78.27 | 8.93 |
| *Undisturbed* | *54.94* | *75.30* | *20.36* |
| *Temporarily Disturbed/ Restored* | *14.40* | *2.97* | *-11.43* |
| Development Area | 25.60 | 16.67 | -8.93 |
| Total | 94.94 | 94.94 | 0.00 |

Note: Acreage does not include the areas in Unit I disturbed by the 2007 infrastructure grading.

The 2007 VTM would allow disturbances to 19.64 acres in UII-NII, and avoids development impacts in UII-NI entirely. The proposed reconfiguration avoids 21.20 acres of high quality callippe silverspot habitat within UII-NI. The proposed development area in the 2007 VTM is within areas of lower value habitat pursuant to the judgment of the USFWS. Additionally, the extent of impacts in UII-NII would be minimized by the use of catchment walls, which limit the grading required to stabilize slopes. The increased development acreage in UII-NII would occur in the eucalyptus grove and areas previously proposed as revegetated areas. The 7.85-acre eucalyptus grove currently acts as a barrier to butterfly movement, and its removal would be beneficial to the species. However, the benefits of tree removal may be offset by construction of the housing development itself acting as a barrier to movement and increasing human activity directly adjacent to butterfly habitat (see Section 4.3 in *Chapter 4 Environmental Consequences*).

Permanent development footprint impacts are reduced from 25.60 acres under the 1989 VTM to 16.67 acres in the 2007 VTM. Temporary impacts are similarly reduced from 14.40 acres to 2.97 acres. Reductions in the amount of temporarily disturbed land results in protection of butterfly habitat, particularly given the difficulty in artificially propagating viola. A total of 20.36 acres of additional Conserved Habitat would be dedicated under the proposed reconfiguration.

## Proposed Mitigation

Development of 2007 VTM would be conducted with the avoidance, minimization, and mitigation measures required in the HCP. Additional measures will also be undertaken:

- The existing HCP (1982, as amended) requires an annual charge of $20 per dwelling unit ($88.56 in 2007 dollars). Pursuant to recent subdivision improvement agreements with the City of Brisbane, the 71 housing units in the 2007 VTM and the 17 units under construction in Unit I would pay an annual assessment of $800.00 in 2005 dollars ($850 in 2007 dollars). This proposed annual assessment ($74,800 in 2007 dollars) represents a

substantial increase to the amount currently required under the HCP. The amount of the dwelling unit charge would be adjusted annually in accordance with increases in the preceding calendar year's Consumer Price Index for Urban Wage Earners and Clerical Workers within the San Francisco-Oakland-San Jose area, as reported by the U.S. Department of Labor's Bureau of Labor Statistics. All funds collected would become part of the HCP's Trust Fund used by the Plan Operator for vegetation management activities. Contribution to the Trust Fund is required by the HCP for all development within the HCP boundary.

- Brookfield Northeast Ridge II LLC would fund a $4 million HCP Endowment to be managed by the Trustees for the ongoing habitat management and monitoring activities of the HCP. The new Endowment is being established pursuant to a negotiated agreement between the City of Brisbane and Brookfield Northeast Ridge II LLC. The Endowment would be funded incrementally upon the granting of final map approval for the lots in UII-NII. Funding of the Endowment was divided over 88 dwelling units, including the 71 housing units in the 2007 VTM and the 17 units under construction in Unit I. It is expected that this Endowment would generate over $200,000 per year in interest, available to the Trustees for the management and monitoring of the Conserved Habitat. The management would be done in accordance with the HMP, as described in Section II.B.
- The remainder of the Northeast Ridge, which includes undisturbed open space areas and the areas temporarily disturbed but restored/revegetated, would be dedicated as Conserved Habitat. Brookfield Northeast Ridge II LLC would fund the management of the restored areas for a period that extends 5 years after the completion of grading and revegetation in these areas. All undisturbed areas would be dedicated to and maintained by the HCP Operator.
- Brookfield Northeast Ridge II LLC would remove a portion of the on-site eucalyptus grove, which acts as a barrier to movement of the mission blue and callippe silverspot butterflies. Approximately 6.82 acres of the eucalyptus grove would be removed at the time of housing construction for UII-NII or a timeframe mutually agreeable to the City and the developer.

The existing HCP currently provides a funding mechanism used to address the highest priority threats to endangered butterfly habitat. The 2007 Habitat Management Plan proposes use of additional methods (i.e., grazing, burning, and mowing) on a more comprehensive scale in order to change the conditions that favor invasive species and brush on the Mountain. Utilizing these additional tools on a broad scale, while continuing existing vegetation management programs, would require substantial additional funding (TRA 2007).

TRA (2007) reports that management and monitoring of Priority 1, 2, and 3 areas within the San Bruno Mountain HCP area to maintain existing grasslands and reclaim former grassland areas that have been lost to coastal scrub succession would require a significant increase in funding. Without the supplemental funding, only the Priority 1 areas containing core habitat for the callippe silverspot and mission blue would be managed. The existing Trust Fund and new

Endowment would be used by the Plan Operator for expanded vegetation management and monitoring activities on all Priority 1, 2, and 3 areas.

# Management and Monitoring of Conserved Habitat

There are currently approximately 2,750 acres of Conserved Habitat (parks and dedicated lands) on San Bruno Mountain. Much of these lands provide habitat for the Mountain's listed butterflies, as well as the other rare and endangered species that inhabit it. Habitat management activities are authorized under the HCP, and since the 1990s, habitat maintenance has been guided by management plans, which had been updated every five years. The addition of the callippe silverspot and bay checkerspot to the ITP would authorize the potential take of both during on-going vegetation management and monitoring of the Conserved Habitat, and the potential take of callippe silverspot during vegetation management, replanting, and restoration following the final phase of the Northeast Ridge development (described above). Take of the callippe silverspot and bay checkerspot and their habitat would be authorized for habitat management activities that occur under the 2007 Habitat Management Plan (HMP) and future iterations. The 2007 HMP is included as Appendix B to this EA.

The 2007 HMP focuses on continuing the current habitat management methods that have proven to be successful, and utilizing additional methods to reverse the conditions that favor invasive species and brush on the Mountain. It defines Priority 1-3 areas for habitat management in order to focus protection and restoration efforts: Priority 1 includes all grassland areas including all habitat for the four listed butterflies; Priority 2 includes all other native plant communities; and Priority 3 includes dense invasive species infestations. The 2007 HMP implements a Stewardship Grazing Program, including application and testing of grazing projects. It also expands monitoring to provide relative population and distribution data for the callippe silverspot, mission blue, and San Bruno elfin butterflies. Habitat management would be conducted in all management units every year, with a focus on fulfilling the goals and objectives of the HCP. The work program would be determined on an annual basis through the collaboration between the Plan Operator, County of San Mateo, and the San Bruno Mountain Technical Advisory Committee, with guidance from the USFWS.

## Vegetation Management

The following is a list of the vegetation management techniques listed in the 2007 HMP and a description of how each is used on the Mountain.

### Hand Work

Hand removal of invasive plants is an effective method for eliminating clusters of invasive plants, especially seedlings and plants whose root structure is not prohibitively deep or large. Hand removal involves identifying the target species and then sending crews out to either pull plants out of the ground, use a weed wrench to remove bigger plants, or cut down plants with an ax maddox or chain saw. The plants removed are piled up and either manually removed, burned, or

allowed to decompose over time. Hand removal of weeds has the benefit of selectively removing weed biomass from sensitive areas.

For the purposes of this EA, flaming is also considered hand work. Flaming involves using a gas torch to pass intense heat over the leafy parts of a plant. The heat causes the plant cell walls to burst, killing the plant. Flaming can be used on young, emerging weeds without affecting established, desirable plants and it leaves no residue. Flaming is not effective on weeds with underground reserves. Flaming may be effective on invasive species such as French Broom, and would only be used during the wet season, during appropriate conditions.

### Herbicide Application

Herbicide control is typically used on mature, dense stands of invasives that are more cost effective to spray than remove by hand. Most invasive pest plant infestations treated with herbicide are treated 2-3 times per year by foliar spraying. The initial treatment typically has a 95% kill rate followed up with routine maintenance every six to twelve months for up to three years until the infestation is killed. Ongoing maintenance and monitoring is required after three years.

Herbicide application is conducted on the Mountain because it can be conducted faster than hand work and is more cost effective. Herbicide application over successive years, however, can create a dense layer of thatch, and this additional biomass on the soil tends to favor colonization by nonnative annual grasses, herbaceous weeds, and coastal scrub succession.

### Livestock Grazing

Grazing is the utilization of grassland (forage) by domestic livestock such as cattle, sheep, goats, or horses. Where appropriate, re-introduction of grazing can be an effective means of maintaining the grassland habitat by reducing brush and tall annual grasses which out-compete native grassland plants, including the butterfly host plants.

Grazing has yet to be used on a large scale on San Bruno Mountain for habitat enhancement purposes. Depending upon a variety of factors, grazing can have a positive (encourage more natives) or negative (stimulate more invasives and erosion) impact upon a landscape. The number of animals, type of animals, duration and frequency of grazing events, and vegetation type are all variables that will influence the results of grazing. Grazing will effect soil compaction, soil nutrients, light, and both native and nonnative vegetation. Livestock type may be the most critical factor to consider due to the variation in diet preferences for different species. While it is possible that a significant improvement in the landscape from grazing may occur immediately, it typically takes at least a 2-4 years to obtain significant results. Over time, a consistent practice of grazing in the early spring can result in reduction of weedy annuals and perpetuation of native grasslands and native annual wildflowers. Grazing can also be an effective tool for managing fire buffers.

### Prescribed Burning

Prescribed burning is defined as fire applied in a knowledgeable manner to fuels on a specific land area to accomplish predetermined, well-defined management objectives. The introduction of a burning program similar to what occurred historically on San Bruno Mountain could be instrumental in achieving long-term sustainability of the grasslands and butterfly habitat on the Mountain. However, because San Bruno Mountain is an open space area that is surrounded by dense urban and suburban development, the ability to allow wildfires to burn or to implement prescribed burning on a regular basis (if even at all), is not a reliable option for habitat managers.

Given the constraints, micro-burns (burns on the order of a few hundred square meters or less, and contained in fire-proof fencing) might prove useful and feasible. These small burns can aid in combating localized weed or scrub infestations or thatch build-up and may be more easily permitted. To be an effective tool for the maintenance of grasslands, micro-burns would need to be conducted in the summer or fall to meet grassland maintenance goals.

If prescribed or micro-burning is employed for managing vegetation, it would occur under the direction of the California Department of Forestry and Fire Protection (CDFFP), and implementation would require the assistance of CDFFP, the County of San Mateo, the Bay Area Air Quality Management District (BAAQMD), and local fire departments. Any burning conducted will be consistent with The San Bruno Mountain Community Wildfire Protection & Fire Use Plan (CDF and TRA 2005).

### Pile Burning

Pile or slash burning an integral part of the management program. This technique is important for reducing the accumulation of brush (wildfire fuels), and for decreasing native scrub and invasive species coverage. Pile burning can be conducted safely during the winter months when the surrounding vegetation is wet and fuel moisture levels are high, and the risk of fire escape is negligible. Combined with mowing and/or grazing, it is an excellent technique for opening up areas for conversion to grassland and for preparing areas for replanting. Post disturbance follow-up weed control is critically important to control the flush of weeds that may occur in areas following clearing and pile burning activities.

### Mowing

Mowing has shown to be an effective tool and is used frequently as part of the current ongoing grassland management of the Mountain. Mowing can be used to depress woody and weedy invasive species in the same manner as grazing and burning. Mowing has been found to be effective at reducing annual grasses and providing a competitive advantage to native species, including the host plants for the mission blue butterfly. It is especially useful within highly sensitive areas, to avoid impacting rare species. It cannot be effectively implemented on a large scale to address annual invasive species, however, due to steep slopes on much of the Mountain. Mowing needs to be conducted repeatedly, 2-4 times per year, and prior to invasive species seed set. Mowing can be done with a tractor mower for large areas, or with a weed-eater for small areas.

### Mechanical Clearing

Clearing of unwanted brush and trees, such as broom, gorse, coyote brush, Monterey pine and eucalyptus may be accomplished by a variety of means. Private contractors, the California Conservation Corps, County Fire Safe crews, and CDF prison crews have been used for brush clearing projects on the Mountain. Mechanical methods for brush and tree removal may also successfully meet management goals, but generally at a higher cost. A Brontosaurus (a large cutting head mounted on a tracked caterpillar) can effectively remove brush where hand removal or grazing is not feasible. The Brontosaurus removes and chips brush and small trees in a single operation.

### Replanting/Restoration

Restoration activities on the Mountain may include re-seeding, Mycorrhizal inoculation, nutrient fixation, and replanting. In areas that have long been dominated by invasives, the density of the native seed in the soil may be markedly diminished. Re-seeding with locally grown, native seed can be used in specific areas that have had invasive species control work, a high erosion potential and/or are located within habitat restoration islands. Mycorrhizal inoculation may include reintroduction of fungi, which grow into the root tip cells of the plants and form a symbiotic relationship with them, to coastal sage scrub restoration sites. Nutrient fixation can be done through the addition of recalcitrant mulch, such as bark or wood chips, to the soil. Replanting has been used with success on San Bruno Mountain when areas have been properly selected and when thorough follow up work has been done to protect plantings. Smaller habitat islands, approximately 1 acre or less, are managed more easily and can provide habitat for the endangered species once plants are established and maintained for a few years (San Bruno Mountain Annual Reports 2002–2006 [TRA 1997]). Successful habitat islands have been created within the conserved areas, as well as on development slopes.

## Monitoring

The HCP requires monitoring to ensure compliance with the terms of the HCP and to evaluate effectiveness of ongoing conservation efforts. The HMP's monitoring program is intended to implement the monitoring requirements of the HCP based on contemporary scientific practices. Undertaken by the Plan Operator, monitoring includes recording regular observations of biological processes and conservation activities on the Mountain. The purpose of monitoring is to assure that the Plan conditions are being met in practice, and to keep an ongoing record of the progress of Plan implementation. This allows the Plan Operator to conduct periodic re-evaluation of the vegetation management activities underway and modify them as appropriate. The degree of monitoring corresponds to the intensity of construction and/or management techniques underway, and would be structured to provide sufficient information for ongoing review. Monitoring of initial experimentation would be more intensive than monitoring done after techniques are established.

### Endangered Butterfly Monitoring

Endangered butterfly monitoring conducted over the 25-year span of the San Bruno Mountain HCP has focused on assessing the distribution and/or relative abundance of the federally endangered callippe silverspot, mission blue, and San Bruno elfin butterflies on the Mountain. All three butterflies have low growing host plants that can easily be overgrown by weeds and/or coastal scrub vegetation, and all three species overlap in their distribution on the Mountain. Two monitoring systems have been used to monitor the endangered species on the Mountain: set transects and wandering transects. The 2007 HMP directs continuation of the current set transect monitoring system, with minor modifications made to the mission blue transects.

### Rare Plant Surveys

Rare plant distribution data has been collected in GIS format within the last 5 years for all listed plant species. This includes the manzanita colonies (all species), Diablo rock rose (*Helianthella castanea*), San Francisco lessingia (*Lessingia germanorum)*, San Francisco spineflower (*Chorizanthe cuspidata var. cuspidata*), San Francisco campion (*Silene verecunda ssp. verecunda*), and dune tansy (*Tanacetum camphoratum)*. The 2007 HMP directs GPS mapping of all the special status rare plant species on a cycle of once every two years on the Mountain to track changes in distribution and monitor health of these colonies.

### Monitoring of Additional Species

Monitoring for additional species (i.e., bumblebees and ants) may be conducted and academic research on the Mountain is encouraged to provide this additional information. HCP monitoring funds are focused on the endangered species and their habitats, as required under the HCP permit. While monitoring is focused on the butterflies of concern and rare plants, study and management of the Mountain's overall ecosystem will benefit the listed species.

### Vegetation Management Effectiveness Monitoring

Vegetation management effectiveness monitoring is vital to recognizing changes to the ecosystem and to gauge the results of habitat management work. Effectiveness monitoring over the 25-year span of the HCP has been focused on tracking invasive species distribution and coastal scrub succession. Vegetation monitoring has been done using primarily two methods: daily tracking of work conducted and overall distribution of vegetation types and invasive species. To track large scale changes in vegetation, the 2007 HMP directs mapping using aerial ortho-photo interpretation and field checking, and that the Mountain be remapped using this technique every 5 years. For finer scale monitoring, fixed transects and quadrats will be used.

## Alternative 2—1989 Northeast Ridge Plan

As described above, the City approved a 1989 VTM that provided for 579 residential units, and the USFWS and DFG approved an Equivalent Exchange Amendment for this revised design in 1990 (refer to Figure 2-2). Under the 1989 VTM, the 228.3-acre parcel would contain 135.7 acres of Conserved Habitat for

the Species of Concern and 92.59 acres of development. Table 2-4 provides an overview of the 1989 VTM acreages.

**Table 2-4.** 1989 VTM Area Summary

| | Unit I (acres) | Unit II (acres) | Total (acres) |
|---|---|---|---|
| Conserved Habitat | 66.39 | 69.34 | 135.73 |
| Development Area | 66.99 | 25.60 | 92.59 |
| Total Acreage | 133.38 | 94.94 | 228.32 |

Note: Unit I includes the 17 units under construction on the previously disturbed and infrastructure grading areas.

If the USFWS amended the ITP to add callippe silverspot take authorization for the existing HCP, the construction of an additional residential neighborhood under the 1989 VTM would result in greater take of callippe silverspot habitat than the reconfigured 2007 VTM proposed in Alternative 1. The 1989 VTM includes disturbance of 18.8 acres for UII-NI and 21.2 acres for UII-NII (refer to Table 2-1). The 1989 VTM would permanently disturb 25.60 acres, with an additional 14.40 acres of revegetated land, for a total of disturbance of 40.00 acres. It would also remove 29.31 acres of grassland habitat as opposed to 12.01 acres under the 2007 VTM. UII-NI is considered a favored hilltop for the butterfly.

Under the 1989 VTM, a total of 151 new dwelling units would be constructed in two neighborhoods in Unit II (not including the 17 units transferred to Unit I in 2006/2007). The 1989 VTM would have resulted in 80 more housing units than the reduced 2007 VTM, which proposes 71 units in Unit II. These units would be assessed the annual dwelling unit charge authorized under the existing HCP and no additional endowment would be established. The existing HCP (1982, as amended) requires an annual charge of $20 per dwelling unit ($88.56 in 2007 dollars) for management and maintenance of Conserved Habitat. At $88.56 per dwelling unit, the 151 housing units would generate a total of $13,372.56 per year (in 2007 dollars) in assessments for implementing conservation activities on the Mountain. This is significantly lower than the annual assessment ($74,800 in 2007 dollars) proposed under the 2007 VTM and associated subdivision agreements for the 88 housing units proposed and under construction.

With the limited funding generated under the 1989 VTM, however, the current habitat management and monitoring programs would be presumed to continue. The 2007 HMP reports that approximately 5.3 acres of grassland are converting to coastal scrub per year, and it is anticipated that this process will continue unless the management program is modified. Management limitations could result in the continued gradual loss of grassland habitat and potential decreases in butterfly distribution. The existing level of funding only allows the highest quality habitat to be maintained and allows encroachment of invasive weeds and native brush into the annual grassland. However, unlike the No Action alternative, management activities could be carried out within all Conserved

Habitat areas as this alternative would authorize take of the callippe silverspot and bay checkerspot butterflies. Although limited in scale due to funding limitations, this would allow for grazing, mowing, handwork, and use of herbicides in grassland that supports viola.

# Alternative 3—No Action

Under the No Action alternative, the existing configuration of developed area and Conserved Habitat described and depicted in the existing HCP (1982, as amended) would remain in effect. This is the approved 1989 VTM (refer to Figure 2-2). However, since there is a prohibition against the take of the callippe silverspot on the Mountain without an ITP, development that results in take could not legally occur in any areas of the Northeast Ridge that support the callippe silverspot (or its host plant). As a result of minimum City standards (for street widths and lengths, street grades, looped water systems, lot widths and depths, driveway and garage depths, and emergency vehicle access), it is anticipated that most, if not all, development in the designated development areas has the potential to result in take of the callippe silverspot. Therefore, under this alternative, Brookfield Northeast Ridge II LLC would not likely build any additional homes within the 1990 authorized development areas. The development of even a portion of the 1989 VTM would likely be difficult and not cost effective.

The No Action alternative would result in little or no new residential construction on the Northeast Ridge at this time. Because access to the Northeast Ridge parcel would be limited to the landowner, the Plan Operator would not conduct habitat management activities for the listed butterflies on the Northeast Ridge. The No Action alternative would also result in no additional endowment funding and no expanded annual budget for vegetation management and monitoring on Conserved Habitat. The annual dwelling unit charge would be limited to $20 per dwelling unit ($88.56 in 2007 dollars), as required by the existing HCP. With no additional funding, continuation of the current management program would result in the continued gradual loss of grassland habitat and likely eventual decreases in butterfly distribution. The existing level of funding only allows the highest value habitat to be maintained and allows encroachment of invasive weeds and native brush into the grassland. Additionally, under the No Action alternative, management activities carried out within the Conserved Habitat would be restricted to areas that do not support viola so that they do not result in take of the callippe silverspot or its habitat. This would eliminate grazing, mowing, and burning, and use of herbicides in grassland that supports viola. The inability of the Plan Operator to conduct vegetation management activities within the grassland would lead to the build up of micro weeds and thatch, as well as brush invasion.

The No Action Alternative would limit development on the Northeast Ridge at this time. However, the landowner may pursue a revised development plan, submittal of a revised HCP amendment and ITP application, and/or legal means to uphold existing development rights.

# 2.3 Alternatives Eliminated from Further Consideration

The USFWS considered several alternatives that were not carried forward for analysis in this EA. Reasons for eliminating alternatives from further consideration included the following.

- The alternative would not adequately meet project objectives.
- The alternative site was found not to be feasible for project construction.
- The alternative was assessed as likely to result in unacceptable adverse environmental and/or economic effects.

## Alternative Development Site

Construction of the proposed development project at an alternative location was considered; however, this alternative was rejected as a feasible alternative because it does not meet the purpose and need for the Proposed Action. The 1983 HCP allowed for development of the Northeast Ridge and ongoing habitat management and monitoring on the Mountain. Construction on an alternative development site would conflict with the HCP and the landowner's development rights.

## Substantially Reduced Development

Construction of a development alternative that was reduced beyond that in Alternative 1 was considered; however, this alternative was rejected because it does not meet the purpose and need for the Proposed Action. The 1983 HCP allowed for development of the Northeast Ridge and limiting development approvals would conflict with the HCP and the landowner's development rights. Additionally, this alternative did not include the additional endowment funding to be made available for ongoing management and monitoring. This would directly conflict with the identified need for enhanced habitat management for the listed butterflies.

Chapter 3
# Affected Environment

## 3.1 Introduction

This chapter describes those aspects of the San Bruno Mountain environment that could or would be affected by issuance of an ITP allowing take of the callippe silverspot and bay checkerspot butterflies for construction and occupation of the 2007 Northeast Ridge VTM and expansion of habitat management and monitoring activities across the Mountain. This chapter focuses on existing conditions on and around the Mountain, with specific reference to the following topics.

- Physical environment—visual resources; air quality; geology, seismicity, and soils; hydrology and water quality; and hazardous materials.
- Biological environment—vegetation and wildlife.
- Social environment—cultural resources; land use and agricultural resources; noise; public health hazards; public services and recreation; transportation; and population and socioeconomic conditions.

## 3.2 Physical Environment

### Visual Resources

The aesthetic value of an area is a measure of its visual character and quality, combined with the viewer response to the area. The scenic quality component can best be described as the overall impression that an individual viewer retains after driving through, walking through, or flying over an area. Viewer response is a combination of viewer exposure and viewer sensitivity.

San Bruno Mountain is a prominent landscape feature in the region; its height in relation to the surrounding low-lying areas accentuates its appearance. The Mountain is visible from surrounding cities and in viewsheds from Highways 101, 280, and 380. The residential and commercial/industrial development on the lower flanks of the Mountain give way to natural vegetation on undeveloped higher slopes. Existing residential neighborhoods on the lower slopes mimic

development patterns across the San Francisco peninsula. In these development areas, residential structures are interspersed with landscaping and parking areas. These human-made elements are notably present and detract from views of the Mountain.

The visual quality of the Mountain's upper vegetated slopes varies depending on the season or the viewshed. In the winter and spring months, newly sprouting annual grasses give the Mountain a fresh, green appearance. In the early spring, these grasses are mixed with a colorful display of native wildflowers. In the late spring, summer and early fall, when the grasses have dried out, the eastern portion of the Mountain takes on a drier, barren appearance.

# Air Quality and Climate

## Climate

The climate of San Mateo County is characterized as Mediterranean, with cool wet winters and warm dry summers. Summertime in the Brisbane area is distinguished by cool marine air and persistent coastal stratus and fog, with average highs between 60ºF and 70ºF and lows between 50ºF and 55ºF. The mornings will typically find portions of the Mountain overcast, followed by clearing on the warmer inland side, but only partial clearing on the cooler coastal side. The summertime temperature gradient across the Mountain is generally from northwest to southeast, with the warmer readings farthest from the coast and in the wind sheltered valleys east of the Coast Range. These differences are enhanced further by a strong afternoon and evening sea breeze that is a result of the temperature (and consequently pressure) difference between the Pacific Ocean and the interior valleys of California.

Winter temperatures are quite temperate, with average highs between 55ºF and 60ºF and lows in the 45ºF to 50ºF range. Over 80 percent of the seasonal rain falls between November and March, occurring over about 10 days per month. Rainfall in the area averages about 20 inches a year.

Because of its irregular topography, not all parts of the Mountain are subject to the same weather at the same time; while it could be cold and foggy on the upper slopes, it may be sunny and warm on the lower slopes.

## Regional Air Quality

The San Francisco Bay Area is located in a large shallow air basin ringed by hills that taper into a number of sheltered valleys around the perimeter. BAAQMD has jurisdiction over air emissions within this basin. The U.S. Environmental Protection Agency (EPA) has established federal emissions standards, while the California Air Resources Board (ARB) has established State emissions standards. These agencies have established ambient air quality standards for seven criteria pollutants: ozone, carbon monoxide (CO), nitrogen dioxide ($NO_2$), sulfur

dioxide ($SO_2$), particulate matter less than 10 microns in diameter (PM10), particulate matter less than 2.5 microns in diameter (PM2.5), and lead (Table 3-1). The Bay Area is considered in nonattainment status for ozone (federal and state) and fine particulate matter (i.e., PM10 and PM2.5) (state only). The 2000 Clean Air Plan (BAAQMD 2000) dictates implementation of all feasible measures in order to reduce ozone precursor pollutant emissions as quickly as possible.

### Sensitive Receptors

Sensitive receptors are people with increased sensitivity to the health effects of air pollutants, such as children, hospital patients, and the elderly. Sensitive receptors in the immediate vicinity of the Mountain may include residential development within the cities of Brisbane, Daly City, and South San Francisco, as well as visitors and recreators to the State and County Park.

## Geology, Seismicity, and Soils

San Bruno Mountain is located in the Coast Ranges geomorphic province, which is characterized by a series of northwest-trending faults, mountain ranges, and valleys. San Bruno Mountain is an uplifted fault block made up of two northwest trending ridges. The main southern ridge is 4¼ miles long, and reaches a maximum elevation of 1,314 feet at Radio Peak. The smaller northern ridge is 2¾ long, with a maximum height of 850 feet. The two ridges are joined at the Saddle near the northwest end of Guadalupe Valley (refer to Figure 1-2).

San Bruno Mountain is underlain by rocks of the Franciscan Complex, which consists of an assemblage of Cretaceous to Jurassic age rocks (205 to 63 million years old) including greenstone, sandstone, shale, conglomerate, limestone, chert, and serpentine. Greywacke sandstone with minor beds of shale is the main rock unit on San Bruno Mountain. Small outcroppings of serpentine may be found along the Hillside Fault shear zone. The depth of the highly weathered rock and soil area varies from three to 25 feet, with an average of ten feet. Beneath this highly weathered zone lies a less weathered zone down to a typical depth of 40 feet. Layers of very hard rock several feet thick are found within these weathered zones. Colluvial deposits may be found in valley floors.

Two types of loamy soils are found on the Northeast Ridge of San Bruno Mountain. The Gaviota eroded Rockland association is a thin, rocky loam found on steeper slopes. The Los Gatos Hills association is a thicker clay loam found on gentle slopes of the Mountain. The soils depth varies from a few inches to over three feet. There is no serpentine rock located within the Northeast Ridge development area.

Crushed aggregate rock is currently being mined from the Mountain at Guadalupe Valley Quarry. Originally opened in 1895, the quarry is the oldest active quarry in the South San Francisco Bay region. Currently owned by

California Rock and Asphalt, Inc, the Guadalupe Valley Quarry Reclamation Plan (Malcolm Carpenter Associates 2000) indicates that the quarry contained three million tons of remaining reserves as of 2000. Aggregate produced from the quarry is largely used for asphaltic concrete.

### Seismicity

San Bruno Mountain is located within the seismically active region of coastal northern California. The northwest trending faults of the San Andreas Fault System are located approximately four miles west of the Mountain. Regionally significant active faults that could produce damaging ground shaking on the Mountain include the San Andreas, Hayward, Calaveras, Concord-Green Valley, and Seal Cove-San Gregorio Faults (LSA Associates 2001).

The County's Earthquake Shaking mapping shows the Mountain as an area of Strong to Violent shaking intensity for an event on the San Andreas Fault, which will "on average experience stronger earthquake shaking more frequently" (San Mateo County 2007).

### Geologic Hazards

Numerous small landslides are known on the Mountain, caused periodically by grading and road cuts. Most of the existing slides are generally shallow. The County's Debris-Flow Source Area mapping (based on USGS Open File Report 97-745 E, 1997 [U.S.Geological Survey 1997a]) shows numerous predicted debris-flow source areas within the study area (San Mateo County 2007). The County's Existing Landslides mapping (based on USGS Open file report 97-745C, 1997 [U.S.Geological Survey 1997b]) is designated almost entirely as Few Landslides with several pockets along the southern border as Mostly Landslides (San Mateo County 2007).

Regional mapping indicates that liquefaction potential in bedrock of San Bruno Mountain is considered to be Very Low, with the exception of the Crocker Industrial Park, which has Moderate liquefaction potential (Association of Bay Area Governments 2006).

## Hydrology and Water Quality

San Bruno Mountain is drained by five different watersheds: Colma Creek and Guadalupe Creek are the main intermittent streams; Visitacion Valley, Diamond Valley, and Sierra Point are three lesser drainages. A small portion of the subject area, northwest of Pointe Pacific, probably drains toward Lake Merced. During the rainy season, other short intermittent streams flow down the ravines and aid in drainage. Gullies occur in many of the ravines that surround the Mountain, especially in areas where sandy soils occur, or where runoff from paved

**Table 3-1.** State and Federal Ambient Air Quality Standards and Bay Area Attainment Status

| | | California Standards[1] | | National Standards[2] | |
|---|---|---|---|---|---|
| Pollutant | Averaging Time | Concentration | Attainment Status | Concentration[3] | Attainment Status |
| Ozone | 8 Hour | 0.070 ppm (137µg/m$^3$) | U[9] | 0.08 ppm | N[4] |
| | 1 Hour | 0.09 ppm (180 µg/m$^3$) | N | | [5] |
| Carbon Monoxide | 8 Hour | 9.0 ppm (10 mg/m$^3$) | A | 9 ppm (10 mg/m$^3$) | A[6] |
| | 1 Hour | 20 ppm (23 mg/m$^3$) | A | 35 ppm (40 mg/m$^3$) | A |
| Nitrogen Dioxide | 1 Hour | 0.18 ppm (338 µg/m$^3$) | A | | |
| | Annual Arithmetic Mean | 0.030 ppm (56 µg/m$^3$) | | 0.053 ppm (100 µg/m$^3$) | A |
| Sulfur Dioxide | 24 Hour | 0.04 ppm (105 µg/m$^3$) | A | 0.14 ppm (365 µg/m$^3$) | A |
| | 1 Hour | 0.25 ppm (655 µg/m$^3$) | A | | |
| | Annual Arithmetic Mean | | | 0.030 ppm (80 µg/m$^3$) | |
| Particulate Matter (PM10) | Annual Arithmetic Mean | 20 µg/m$^3$ | N[7] | | |
| | 24 Hour | 50 µg/m$^3$ | N | 150 µg/m$^3$ | U |
| Particulate Matter - Fine (PM2.5) | Annual Arithmetic Mean | 12 µg/m$^3$ | N[7] | 15 µg/m$^3$ | A |
| | 24 Hour | | | 35 µg/m$^3$ [10] | U |
| Sulfates | 24 Hour | 25 µg/m$^3$ | A | | |
| Lead | Calendar Quarter | | | 1.5 µg/m$^3$) | A |
| | 30 Day Average | 1.5 µg/m$^3$) | A | | |
| Hydrogen Sulfide | 1 Hour | 0.03 ppm (42 µg/m$^3$ | U | | |

| | | California Standards[1] | | National Standards[2] | |
|---|---|---|---|---|---|
| Pollutant | Averaging Time | Concentration | Attainment Status | Concentration[3] | Attainment Status |
| Vinyl Chloride (chloroethene) | 24 Hour | 0.010 ppm (26 µg/m$^3$ | No information available | | |
| Visibility Reducing particles | 8 Hour(1000 to1800 PST) | [8] | A | | |
| **A=Attainment** | | **N=Nonattainment** | **U=Unclassified** | | |
| mg/m$^3$=milligrams per cubic meter | | ppm=parts per million | | µg/m$^3$=micrograms per cubic meter | |

Notes:

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter—PM10, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM10 annual standard), then some measurements may be excluded. In particular, measurements are excluded that ARB determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the state standard.
2. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.08 ppm or less. The 24-hour PM10 standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m3. The 24-hour PM2.5 standard is attained when the 3-year average of 98th percentiles is less than 65 µg/m3. Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM10 is met if the 3-year average falls below the standard at every site. The annual PM2.5 standard is met if the 3-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard.
3. National air quality standards are set at levels determined to be protective of public health with an adequate margin of safety.
4. In June 2004, the Bay Area was designated as a marginal nonattainment area of the national 8-hour ozone standard.
5. The national 1-hour ozone standard was revoked by EPA on June 15, 2005.
6. In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.
7. In June 2002, ARB established new annual standards for PM2.5 and PM10.
8. Statewide visibility-reducing particles (VRP) Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.
9. This standard was approved by the Air Resources Board on April 28, 2005 and became effective on May 17, 2006.
10. EPA lowered the 24-hour PM2.5 standard from 65 µg/m3 to 35 µg/m3 in 2006. EPA is required to designate the attainment status of BAAQMD for the new standard by December of 2009.

Source: Bay Area Air Quality Management District 2007.

roadways or compacted dirt roads is channelized. Figure 3-1 shows the major watersheds draining the Mountain.

The Colma Creek watershed drains the largest area of San Bruno Mountain, including the entire County Park and a portion of the State Park. The Guadalupe Valley watershed drains the second largest portion, including the southern portion of the Northeast Ridge, the Quarry, the City of Brisbane (excluding Gladys Ravine), and Owl and Buckeye Canyons. Drainage from the Quarry site is intercepted by the Guadalupe Valley Municipal Improvement District (GVMID) storm drain system and flows into the Guadalupe Canal, to the Brisbane lagoon, and ultimately discharges to San Francisco Bay. The Paradise Valley and Sierra Point watersheds together drain the South Slope development area.

The Northeast Ridge contributes runoff to three watersheds: Guadalupe Valley, Visitacion Valley, and directly into San Francisco Bay. The majority of runoff from the site drains into the Guadalupe Valley watershed.

While there is no year-round water flow on the Mountain, a number of springs and seeps are known. A freshwater bog is located near the junction of Guadalupe Valley Parkway and Radio Ridge Road, and two draws are located in Guadalupe Valley on the south side of Northeast Ridge. The lush vegetation in these areas indicates a greater water holding capacity than other areas of the Mountain.

## Flooding

The Federal Emergency Management Agency (FEMA) provides information on flood hazard and frequency for cities and counties on its flood insurance rate maps (FIRMs). FEMA identifies designated zones to indicate flood hazard potential. In general, flooding occurs along waterways, with infrequent localized flooding also occurring because of constrictions in storm drain systems or surface water ponding. The County's FEMA Flood Zones mapping (based on Q3 Flood Data derived from FEMA's Flood Insurance Rate Maps) identify one FEMA flood zone located within the Mountain's HCP boundaries (San Mateo County 2007). This 100-year flood zone is located within the Crocker Industrial Park.

## Water Quality

Surrounding land uses largely affect surface water quality. Pollutant sources on the Mountain include parking lots and roadways, rooftops, exposed earth at construction sites, and landscaped areas. Water quality impacts from construction are of particular concern. Grading for construction activity removes vegetation and exposes soil to wind and water erosion, which can result in sedimentation that ultimately flows into surface waters. Metals and petroleum hydrocarbons washed from roadways and parking lots, as well as fertilizers, pesticides, and herbicides from landscaped areas, may degrade water quality and wildlife habitat in receiving water bodies.

Water quality in surface and groundwater bodies is regulated by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). The SFBRWQCB does not list any water body on the Mountain as impaired on the 2006 Clean Water Act Section 303(d) List of Water Quality Limited Segments nor does it specify any beneficial uses in the 1995 Water Quality Control Basin Plan.

## Hazardous Materials

Several properties on or adjacent to the Mountain are likely to store hazardous materials in quantity: the Guadalupe Valley Quarry and industrial uses at the Crocker Industrial Park. Hazardous materials currently and historically used at the Guadalupe Valley Quarry site include petroleum products (oil, fuels, and lubricants), waste oil, batteries, antifreeze, solvents, paints, and explosives. Remedial actions for groundwater contamination due to three removed underground storage tanks (USTs) included excavation of petroleum-contaminated soils in the early 1990s (LSA Associates 2001).

# 3.3 Biological Environment

The Mountain supports both common and sensitive biological communities. Sensitive biological communities include habitats with high species diversity, high productivity, unusual nature, limited distribution, declining status, or a combination of these attributes. The California Natural Diversity Database (CNDDB) contains a current list of rare natural communities throughout the state (California Natural Diversity Database 2007). Table 3-2 provides a list of special status plant species on the Mountain. Table 3-3 provides a list of special status wildlife species on the Mountain.

Over the last 25 years, management efforts on the Mountain have not been able to keep pace with observed landscape level changes that are occurring from 1) the expansion of coastal scrub over large areas of grassland; and 2) the influx and expansion of herbaceous and grass weeds within the native grasslands, especially on drier and lower elevation slopes (TRA Environmental Sciences, Inc. 2007).

## Vegetation

The dominant vegetation communities on the Mountain are grassland and native California scrub, with lesser extents of exotic woodland dominated by eucalyptus (*Eucalyptus globulus*) and exotic scrub dominated by gorse (*Ulex europaeus*) and broom species (French broom, *Genista monspessula* and Scotch broom, *Cytisus scoparius*). Other vegetation types found in localized areas include California bay (*Umbellularia californica*)/buckeye (*Aesculus californica*) woodland in Owl and Buckeye Canyons, and small wetlands in the Saddle. The grassland contains a mixture of native, mostly perennial grasses and introduced annual grasses, as

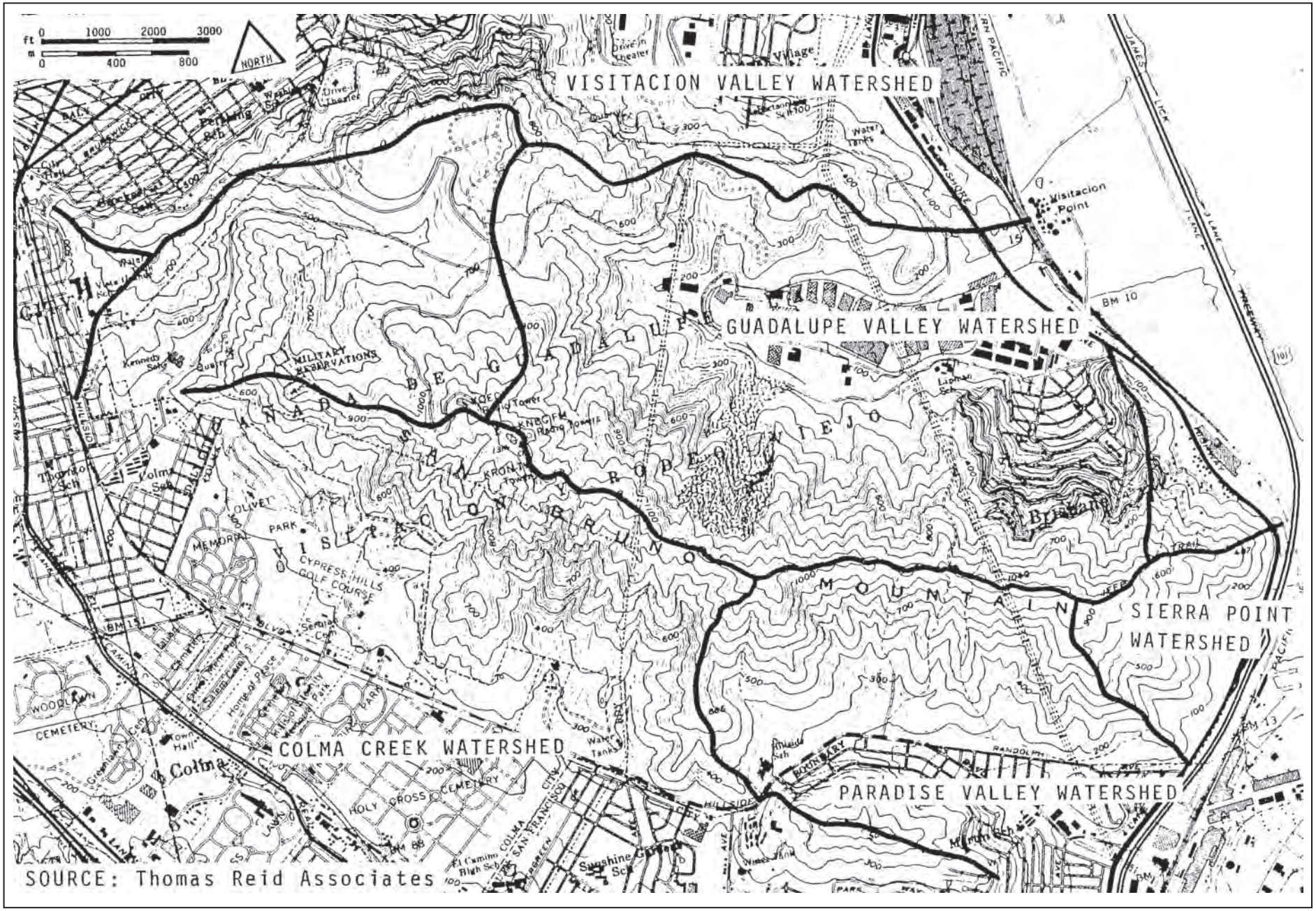


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**Figure 3-1**
**San Bruno Mountain Watersheds**

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**Table 3-2.** Special-Status Plant Species with Potential to Occur Within Vicinity of San Bruno Mountain 

| Common and Scientific Name | Status[1] Federal/State / CNPS | California Distribution | Habitats | Blooming Period | Potential Occurrence in the HCP Study Area |
|---|---|---|---|---|---|
| Franciscan onion *Allium peninsulare* var. *franciscanum* | –/–/1B.2 | Central Coast, San Francisco Bay region: Santa Clara, San Mateo, and Sonoma Counties | Clay and often serpentinite soils in cismontane woodland, valley and foothill grassland, below 1,000' | May-Jun | Habitat may be present in the study area. |
| Bent-flowered-fiddleneck *Amsinckia lunaris* | –/–/1B.2 | Inner North Coast Ranges, San Francisco Bay Area, west-central Great Valley | Coastal bluff scrub, valley and foothill grasslands, cismontane woodlands, from 10-1,645 feet (3-500 m) | Mar-Jun | Habitat may be present in the study area. |
| Coast rock cress *Arabis blepharophylla* | –/–/4.3 | Outer north Coast Ranges, San Francisco Bay region: Contra Costa, Marin, Santa Cruz, San Francisco, San Mateo, and Sonoma Counties | Broadleaved upland forest, coastal bluff scrub, coastal prairie, coastal scrub | Feb-May | Known occurrences on San Bruno Mountain |
| San Bruno Mountain manzanita *Arctostaphylos imbricata* | –/E/1B.1 | Western San Francisco Bay: San Bruno Mountain, San Mateo County | Chaparral and coastal scrub on rocky outcrops | Feb-May | Known occurrences on San Bruno Mountain |
| Montara manzanita *Arctostaphylos montaraensis* | SC/–/1B.2 | Endemic to San Mateo County, San Bruno Mountain, Montara Mountain | Maritime chaparral, coastal scrub, 650'-1,640' | Jan-Mar | Known occurrences on San Bruno Mountain |
| Pacific manzanita *Arctostaphylos pacifica* | SC/E/1B.2 | San Bruno Mountains, San Mateo County | Coastal scrub, on sandstone ridge associated with *Arctostaphylos imbricata* and *Erysium franciscanum* v. *franciscanum* | Jan-Mar | Known occurrences on San Bruno Mountain |
| Kings Mountain Manzanita *Arctostaphylos regismontana* | –/–/1B.2 | Western San Francisco Bay region, northern Santa Cruz Mountains: Santa Cruz and San Mateo Counties | Broadleaved upland forest, chaparral, North Coast coniferous forest, on granitic or sandstone | Jan-Apr | Microhabitat unlikely to be present in the study area. |
| San Francisco Bay spineflower *Chorizanthe cuspidata* var. *cuspidata* | SC/–/1B.2 | Coastal central California, from Sonoma to San Mateo County | Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub on sandy soils | Apr-Jul | Known occurrences on San Bruno Mountain |

**Table 3-2.** Special-Status Plant Species with Potential to Occur Within Vicinity of San Bruno Mountain 

| Common and Scientific Name | Status[1] Federal/State / CNPS | California Distribution | Habitats | Blooming Period | Potential Occurrence in the HCP Study Area |
|---|---|---|---|---|---|
| Franciscan thistle *Cirsium andrewsii* | –/–/1B.2 | Coastal California, from Sonoma County to San Mateo County | Moist areas in coastal prairie, coastal scrub, and mixed evergreen forest, sometimes on serpentinite, at 0-440 feet (0-135 m) | Mar-Jul | Habitat has slight chance to occur in the study area. |
| Fountain thistle *Cirsium fontinale* var. *fontinale* | E/E/1B.1 | Endemic to San Mateo County | Seeps in chaparral and grassland, on serpentinite | Jun-Oct | Habitat has slight chance to occur in the study area. |
| Compact cobwebby thistle *Cirsium occidentale* var. *compactum* | –/–/1B.2 | San Francisco and San Luis Obispo Counties | Chaparral, coastal dunes, coastal prairie, coastal scrub | Apr-Jun | Habitat has slight chance to occur in the study area. |
| San Francisco collinsia *Collinsia multicolor* | –/–/1B.2 | Coastal California from San Francisco to Monterey County | Closed-cone coniferous forest, coastal scrub | Mar-May | Known occurrences on San Bruno Mountain |
| Western leatherwood *Dirca occidentalis* | –/–/1B.2 | San Francisco Bay region, Alameda, Contra Costa, Marin, Santa Clara, San Mateo, and Sonoma Counties | Moist areas in broadleaved upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, North Coast coniferous forest, riparian forest, riparian woodland, 165-1,300' | Jan-Apr | Habitat has slight chance to occur in the study area. |
| Tiburon buckwheat *Eriogonum luteolum* var. *caninum* | –/–/3.2 | Central inner north Coast Range, northern Central coast, and northern San Francisco Bay area: Alameda, Colusa, Lake, Marin, Napa, Santa Clara, San Mateo, Sonoma* | Chaparral, coastal prairie, valley and foothill grassland, on serpentinite, 30-1,600' | Jun-Sep | Habitat may be present in the study area. |
| San Mateo woolly sunflower *Eriophyllum latilobum* | E/E/1B.1 | One known occurrence in San Mateo County | Open areas in coast live oak woodland, often on roadsides, sometimes on serpentinite, 150-500' | May-Jun | Habitat has slight chance to occur in the study area. |
| San Francisco wallflower *Erysimum franciscanum* | SC/–/4.2 | Marin, Santa Clara, Santa Cruz, San Francisco, San Mateo, and Sonoma Counties | Coastal dunes, coastal scrub, valley and foothill grassland, often serpentinite or granitic substrates | Mar-Jun | Known occurrences on San Bruno Mountain |

**Table 3-2.** Special-Status Plant Species with Potential to Occur Within Vicinity of San Bruno Mountain 

| Common and Scientific Name | Status[1] Federal/State / CNPS | California Distribution | Habitats | Blooming Period | Potential Occurrence in the HCP Study Area |
|---|---|---|---|---|---|
| Fragrant fritillary *Fritillaria liliacea* | –/–/1B.2 | Coast Ranges from Marin County to San Benito County | Adobe soils of interior foothills, coastal prairie, coastal scrub, annual grassland, often on serpentinite, below 1,350' | Feb-Apr | Habitat has slight chance to occur in the study area. |
| San Francisco gumplant *Grindelia hirsutula* var. *maritima* | –/–/1B.2 | Coastal California: Monterey, Marin, Santa Cruz, San Francisco, San Luis Obispo, and San Mateo Counties | Coastal bluff scrub, coastal scrub, sandy soils on serpentine grassland | Aug-Sep | Known occurrences on San Bruno Mountain |
| Diablo rock rose *Helianthella castanea* | SC/–/1B | San Francisco Bay area: Alameda, Contra Costa, Marin*, San Francisco*, and San Mateo Counties | At chaparral/oak woodland ecotone, often in partial shade, on rocky soils, (60-1300 m) 80-3,800' | Apr-Jun | Known occurrences on San Bruno Mountain |
| Marin western flax *Hesperolinon congestum* | T/T/1B.1 | Marin, San Francisco, and San Mateo Counties | Chaparral, serpentinite grassland | Apr-Jul | Habitat may be present in the study area. |
| Santa Cruz tarplant *Holocarpha macradenia* | T/E/1B.1 | Coastal slope of the Santa Cruz Mountains, Monterey and Santa Cruz Counties | Coastal terrace grasslands on light sandy to sandy clay soils, below 300 feet | Jun-Oct | Habitat has slight chance to occur in the study area. |
| Kellogg's horkelia *Horkelia cuneata* ssp. *sericea* | SC/–/1B.1 | Coastal California from Marin to Santa Barbara Counties | Openings in closed-cone coniferous forest, coastal scrub, maritime chaparral, on sandy or gravelly soils | Apr-Sep | Habitat has slight chance to occur in the study area. |
| San Francsicso lessingia *Lessingia germanorum* | E/E/1B.1 | San Francisco and San Mateo Counties | Coastal scrub, on remnant dunes | Jun-Nov | Known occurrences on San Bruno Mountain |
| Woolly-headed lessingia *Lessingia hololeuca* | –/–/3 | Southern north Coast Ranges, southern Sacramento Valley, northern San Francisco Bay region, Alameda, Monterey, Marin, Napa, Santa Clara, San Mateo, Solano, Sonoma, and Yolo Counties | Clay or serpentinite soils of coastal scrub, lower montane coniferous forest, valley and foothill grassland, below 1,000' | Jun-Oct | Habitat may be present in the study area. |

**Table 3-2.** Special-Status Plant Species with Potential to Occur Within Vicinity of San Bruno Mountain 

| Common and Scientific Name | Status[1] Federal/State / CNPS | California Distribution | Habitats | Blooming Period | Potential Occurrence in the HCP Study Area |
|---|---|---|---|---|---|
| Coast lily *Lilium maritimum* | SC/–/1B.1 | North Coast; Mendocino, Marin*, San Francisco*, San Mateo*, and Sonoma Counties | Broadleaved upland forest, closed-cone Pine-cypress forest, coastal scrub, perennial grassland, North Coast coniferous forest, often in roadside ditches, 15-115' | May-Jul | Habitat may be present in the study area. |
| San Mateo tree lupine *Lupinus eximius* | SC/–/3.2 | San Mateo and possibly Sonoma Counties | Chaparral, coastal scrub | Apr-Jul | Habitat may be present in the study area. |
| Indian Valley bush mallow *Malacothamnus aboriginum* | –/–/1B.2 | Inner South Coast Ranges: San Benito, Fresno, and Monterey Counties | Rocky areas in chaparral and oak woodland, often in burned areas | Apr-Oct | Habitat may be present in the study area. |
| Arcuate bush mallow *Malacothamnus arcuatus* | –/–/1B.2 | Santa Clara, Santa Cruz, and San Mateo Counties | Chaparral, between 15-355 m | Apr-Sep | Habitat has slight chance to occur in the study area. |
| Davidson's bush mallow *Malacothamnus davidsonii* | –/–/1B.2 | Los Angeles, Monterey, and San Luis Obispo Counties | Coastal scrub, chaparral, and riparian woodland in sandy washes, 900-2,800' | Jun-Sep | Habitat has slight chance to occur in the study area. |
| Hall's bush mallow *Malacothamnus hallii* | –/–/1B.2 | Alameda, Contra Costa, Merced, Santa Clara, and Stanislaus Counties | Chaparral and coastal scrub between 30-2,500' | May-Sep | Habitat has slight chance to occur in the study area. |
| Mt. Diablo cottonweed *Micropus amphibolus* | –/–/3.2 | Southern North coast ranges, southern south outer coast ranges, Sierra Nevada Foothills, San Francisco Bay area. Alameda, Contra Costa, Lake, Monterey, Marin, Napa, Santa Cruz, and Sonoma Counties | Bare grassy rocky slopes in broadleaved upland forest, cismontane woodland, valley and foothill grassland | Apr-May | Habitat may be present in the study area. |
| Marsh microseris *Microseris paludosa* | –/–/1B.2 | Coastal California from Mendocino County to San Luis Obispo County | Grassland, coastal scrub, closed-cone-coniferous forest, cismontane woodland | Apr-Jun | Habitat has slight chance to occur in the study area. |
| White-rayed pentachaeta *Pentachaeta bellidiflora* | E/E/1B.1 | One occurrence in San Mateo County, historically known also from Marin and Santa Cruz Counties | Annual grassland, often on serpentinite | Mar-May | Known occurrences on San Bruno Mountain |

**Table 3-2.** Special-Status Plant Species with Potential to Occur Within Vicinity of San Bruno Mountain 

| Common and Scientific Name | Status[1] Federal/State / CNPS | California Distribution | Habitats | Blooming Period | Potential Occurrence in the HCP Study Area |
|---|---|---|---|---|---|
| Choris's popcorn-flower *Plagiobothrys chorisianus* var. *chorisianus* | –/–/1B.2 | Southwest San Francisco Bay Area, northern Central Coast: Santa Cruz, San Francisco and San Mateo Counties | Chaparral, coastal prairie, coastal scrub, in mesic areas | Mar-Jun | Known occurrences on San Bruno Mountain |
| San Francisco popcorn flower *Plagiobothrys diffusus* | –/E/1B.1 | Alameda and Santa Cruz County | Coastal prairie, valley and foothill grassland | Mar-Jun | Habitat may be present in the study area. |
| Adobe sanicle *Sanicula maritima* | –/R/1B.1 | Coastal Monterey and San Luis Obispo Counties. Historically known from the San Francisco Bay area: Alameda* and San Francisco* Counties | Moist clay or ultramafic soils, in meadows and grassland | Feb-May | Habitat may be present in the study area. |
| San Francisco campion *Silene verecunda* ssp. *verecunda* | –/–/1B.2 | Northern Central Coast, San Francisco Bay area: San Francisco, San Mateo, Santa Cruz, and Sutter Counties | Coastal bluff scrub, chaparral, coastal prairie, coastal scrub, valley and foothill grassland, in sandy areas, 100-2,100' | Mar-Aug | Known occurrences on San Bruno Mountain |
| Santa Cruz microseris *Stebbinsoseris decipiens* | –/–/1B.2 | Coastal California: scattered occurrences from Marin County to Monterey County | Grasslands, coastal prairie, and open grassy areas in other habitat types | Apr-May | Habitat may be present in the study area. |
| San Francisco owl's clover *Triphysaria floribunda* | –/–/1B.2 | Marin, San Francisco, and San Mateo Counties | Coastal prairie and annual grassland, on serpentinite | Apr-May | Known occurrences on San Bruno Mountain |
| Dune tansy *Tanacetum camphoratum* | –/–/– | North Coast, northern Central Coast; Oregon to southern British Columbia | Coastal dunes at elevations less than 98' above mean sea level | Jun-Sep | |

**1. Status Explanations**

**Federal**

E = listed as endangered under the federal Endangered Species Act.
T = listed as threatened under the federal Endangered Species Act.
SC = species that have been of special concern; rare, but no formal status under the Endangered Species Act
– = no listing.

**State**

E = listed as endangered under the California Endangered Species Act.
T = listed as under the California Endangered Species Act.
R = listed as rare threatened under the California Endangered Species Act.
– = no listing.

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**Table 3-3.** Special-Status Wildlife Species with Potential to Occur Within Vicinity of San Bruno Mountain 

| Common and Scientific Name | Status[1] Federal/State | California Distribution | Habitats | Occurrence in the HCP Study Area |
|---|---|---|---|---|
| Invertebrates | | | | |
| Bay checkerspot butterfly *Euphydryas editha bayensis* | T/-- | Vicinity of San Francisco Bay including San Francisco peninsula in San Mateo County, and mountains near San Jose, Santa Clara County. | Native grasslands on outcrops of serpentine soil; California plantain (*Plantago erecta*) and owl's clover (*Castilleja exserta*, or *Castilleja densiflora*) are host plants. | Suitable habitat present. Historically found on south slope along ridgeline. Critical habitat has been designated within a portion of the HCP boundary. |
| San Bruno elfin *Callophrys mossii bayensis* | E/-- | San Bruno Mountain, Montara Mountains, and northern end of Santa Cruz Mountains, San Mateo County. | North-facing slopes and ridges facing Pacific Ocean from 600 to 1,100 feet; stonecrop (*Sedum spathulifolium*) is larval host plant. | Present. Populations on Radio Ridge and along the Southeast Ridge. |
| Mission blue *Icaricia icarioides missionensis* | E/-- | San Bruno Mountain, San Mateo County; Twin Peaks, San Francisco County. | Hills and ridge tops, as well as slopes with south exposure with caterpillar food plants, *Lupinus* spp. | Present. Populations on peak, western- and south-facing slopes, Northeast Ridge, main ridge, as well as Owl and Buckeye Canyons (USFWS 2006). |
| Callipe silverspot butterfly *Speyeria callippe callippe* | E/-- | San Bruno Mountain, San Mateo County, and a single location in Alameda County. | Open hillsides where wild pansy (*Viola pendunculata)* grows; larvae feed on Johnny jump-up plants, whereas adults feed on native mints and non-native thistles. | Present. Populations on the Southeast Ridge and Guadeloupe Hills. |
| Amphibians and Reptiles | | | | |
| California red-legged frog *Rana aurora draytonii* | T/SSC | Found along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Butte County to Calaveras County. | Permanent and semi-permanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation. May estivate in rodent burrows or cracks during dry periods | Low. Suitable habitat present. Known historically to exist on San Bruno Mountain, but has not been observed in recent years. |

**Table 3-3.** Special-Status Wildlife Species with Potential to Occur Within Vicinity of San Bruno Mountain 

| Common and Scientific Name | Status[1] Federal/State | California Distribution | Habitats | Occurrence in the HCP Study Area |
|---|---|---|---|---|
| San Francisco garter snake *Thamnophis sirtalis tetrataenia* | E/E, FP | Northern San Mateo County southward along the coast and the eastern slope of the Santa Cruz Mountains to the Santa Cruz County line | Favors ponds, lakes, slow moving streams and marshy areas containing abundant vegetation, which it uses for cover; nearby upland habitat is important during fall and winter | Low. Suitable habitat present. Known historically to exist on San Bruno Mountain, but has not been observed in recent years. |
| Birds | | | | |
| Golden eagle *Aquila chrysaetos* | PR/SSC, FP | Foothills and mountains throughout California. Uncommon nonbreeding visitor to lowlands such as the Central Valley | Nest on cliffs and escarpments or in tall trees overlooking open country. Forages in annual grasslands, chaparral, and oak woodlands with plentiful medium and large-sized mammals | Low. Potential migration and foraging habitat. Suitable nesting habitat not present. |
| Bald eagle *Haliaeetus leucocephalus* | T(PD)/E, FP | Nests in Siskiyou, Modoc, Trinity, Shasta, Lassen, Plumas, Butte, Tehama, Lake, and Mendocino Counties and in the Lake Tahoe Basin. Reintroduced into central coast. Winter range includes the rest of California, except the southeastern deserts, very high altitudes in the Sierra Nevada, and east of the Sierra Nevada south of Mono County | In western North America, nests and roosts in coniferous forests within 1 mile of a lake, reservoir, stream, or the ocean | Low. May winter in vicinity, though suitable nesting habitat not present. |
| American peregrine falcon *Falco peregrinus anatum* | --/E | Permanent resident along the north and south Coast Ranges. May summer in the Cascade and Klamath Ranges and through the Sierra Nevada to Madera County. Winters in the Central Valley south through the Transverse and Peninsular Ranges and the plains east of the Cascade Range | Nests and roosts on protected ledges of high cliffs, usually adjacent to lakes, rivers, or marshes that support large prey populations | Low. Potential migration and foraging habitat. |

**Table 3-3.** Special-Status Wildlife Species with Potential to Occur Within Vicinity of San Bruno Mountain 

| Common and Scientific Name | Status[1] Federal/State | California Distribution | Habitats | Occurrence in the HCP Study Area |
|---|---|---|---|---|
| Northern harrier *Circus cyaneus* | --/SSC | Occurs throughout lowland California. Has been recorded in fall at high elevations | Grasslands, meadows, marshes, and seasonal and agricultural wetlands | Migration, foraging, and nesting habitat. Observed in study area. |
| White-tailed kite *Elanus leucurus* | --/FP | Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border | Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging | Foraging and nesting habitat. Observed in study area. |
| Cooper's hawk *Accipiter cooperii* | --/SSC | Throughout California except high altitudes in the Sierra Nevada. Winters in the Central Valley, southeastern desert regions, and plains east of the Cascade Range | Nests in a wide variety of habitat types, from riparian woodlands and digger pine-oak woodlands through mixed conifer forests | Migration and foraging habitat. Observed in study area. |
| Sharp-shinned hawk *Accipiter striatus* | --/SSC | Permanent resident in the Sierra Nevada, Cascade, Klamath, and north Coast Ranges at mid elevations and along the coast in Marin, San Francisco, San Mateo, Santa Cruz, and Monterey Counties. Winters over the rest of the state except at very high elevations | Dense canopy ponderosa pine or mixed-conifer forest and riparian habitats | Migration and foraging habitat. Observed in study area. |
| Loggerhead shrike *Lanius ludovicianus* | --/SSC | Resident and winter visitor in lowlands and foothills throughout California. Rare on coastal slope north of Mendocino County, occurring only in winter | Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches | Migration, foraging, and nesting habitat. Observed in study area. |

[a] **Status explanations:**

**Federal**
E = listed as endangered under the federal Endangered Species Act.
T = listed as threatened under the federal Endangered Species Act.
PD = proposed for delisting.
-- = no listing.

**State**
E = listed as endangered under the California Endangered Species Act.
T = listed as threatened under the California Endangered Species Act.
FP = fully protected under the California Fish and Game Code.
SSC = species of special concern in California.
-- = no listing.

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well as many species of native and non-native wildflowers. The scrub community consists of representative species from three distinct recognized woody communities—chaparral, Northern coastal scrub, and foothill woodland. Figure 3-2 shows the extent of vegetation communities on the Mountain.

Within the Northeast Ridge, the dominant vegetation is annual grassland, with scattered areas of brush and a large stand of eucalyptus. The grassland contains introduced annual grasses with small areas of native perennial grasses also present. These grasses are intermixed with many species of native and non-native wildflowers. Native species found on the site include: viola (also called Johnny jump-up) (*Viola pedunculata)*, Douglas iris (*Iris douglasiana*), California poppy (*Eschscholtzia californica*), blue dicks (*Brodiaea pulchella*), lupines (including *L. albifrons* and *L. variicolor*), goldfields (*Lasthenia chrysostoma*), golden aster (*Chrysopsis villosa*), and wild buckwheat (*Eriogonum latifolium*). Introduced species include: wild mustard (*Brassica campestris*), wild radish (*Raphanus sativa*), Italian thistle (*Carduus spp.*), and fennel (*Foeniculum vulgare*).

# Wildlife

Numerous wildlife species occur within the vegetation communities on the Mountain. The animals present are those typically expected to inhabit brush and grassland habitat of the San Francisco Bay Region, with the exception of mule deer. Species observed or expected include the Virginia opossum (*Didelphis virginiana*), brush rabbit (*Sylvilagus bachmani*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), California ground squirrel (*Spermophilus beecheyi*), common gray fox (*Urocyon cinereoargenteus*), and bobcat (*Lynx rufus*). A mountain lion (*Puma concolor*) was observed on the Mountain in 2005. Many reptiles and amphibians also occur, including California slender salamander (*Batrachoseps attenuatus*), arboreal salamander (*Aneides lugubris*), Pacific treefrog (*Hyla regilla*), western fence lizard (*Sceloporus occidentalis*), western yellow-bellied racer (*Coluber constrictor mormon*), and Pacific gopher snake (*Pituophis catenifer*).

The Mountain also supports a wide variety of birds, including hummingbirds, warblers, swallows, sparrows, wrens, and raptors. Raptors are often observed over the Northeast Ridge due the expanse of grassland and the presence of the eucalyptus trees, which provide good nesting habitat.

## Species of Concern

The existing ITP authorizes take coverage for the mission blue butterfly, the San Bruno elfin butterfly, and the San Francisco garter snake. The HCP amendment proposes the addition of the federally endangered callippe silverspot and the federally threatened bay checkerspot to the list of species covered by the existing ITP. Table 3-4 provides a summary of special status species status on the Mountain. The following sections provide a description for each of the special status species.

**Table 3-4.** Special Status Species Status on San Bruno Mountain

| Name | Listing Status | Status on Mountain |
|---|---|---|
| Mission Blue butterfly (*Icaricia icarioides missionensis*) | Federal endangered | Present |
| San Bruno Elfin butterfly (*Callophrys mossii bayensis*) | Federal endangered | Present |
| San Francisco Garter snake (*Thamnophis sirtalis tetrataenia*) | Federal endangered | Not present |
| Callippe Silverspot butterfly (*Speyeria callippe callippe*) | Federal endangered | Present |
| Bay Checkerspot butterfly (*Euphydryas editha bayensis*) | Federal threatened | No records since mid-1980s (Extirpated) |
| California Red-legged frog (*Rana aurora draytonii*) | Federal threatened | No records since 1970s (Extirpated) |

## Mission Blue Butterfly

The mission blue butterfly (*Icaricia icarioides missionensis*) was listed as endangered in 1976. Critical habitat was proposed in 1977, but was later withdrawn .

The mission blue is a small, delicate butterfly in the gossamer-winged family (Lycaenidae). Wingspan is about 1 to 1.5 inch. The upper wing surfaces of the male are iridescent blue and lavender with black margins fringed with long white hair-like scales. There are no spots on the upper surfaces of the wings. In males, the ventral surfaces of the wings are whitish with small circular gray spots in the submarginal areas and larger circular black spots located in post-median and submedian areas of the fore and hind wings. The body of the male is dark bluish brown. Females have dark brown upper wing surfaces marked with blue basal areas. The margins and wing fringe are similar to the male. Female underwings are stone gray with a dot pattern similar to the males' (USFWS 2007a).

The adult flight season extends from late March to early July, depending on the location and microclimatic conditions. Females lay eggs throughout the mating flight. Adults do not wander far from lupine (*Lupinus albifrons*, *L. formosus* and *L. variicolor*), the larval food plant. The adults feed on *Chrysopsis villosa*, *Brodiaea pulchella*, *Brodiaea taxa*, and *Eriogonum latifolium*. The eggs are laid singly on leaves, stems, flowers and seed pods of lupine species (USFWS 2007a).

### Distribution

The mission blue was first collected in 1937 from the Mission District of San Francisco. Today a small colony is located on Twin Peaks. The species has also been collected from Fort Baker, Marin County. The majority of the remaining colonies are found on San Bruno Mountain. Other colonies have been discovered

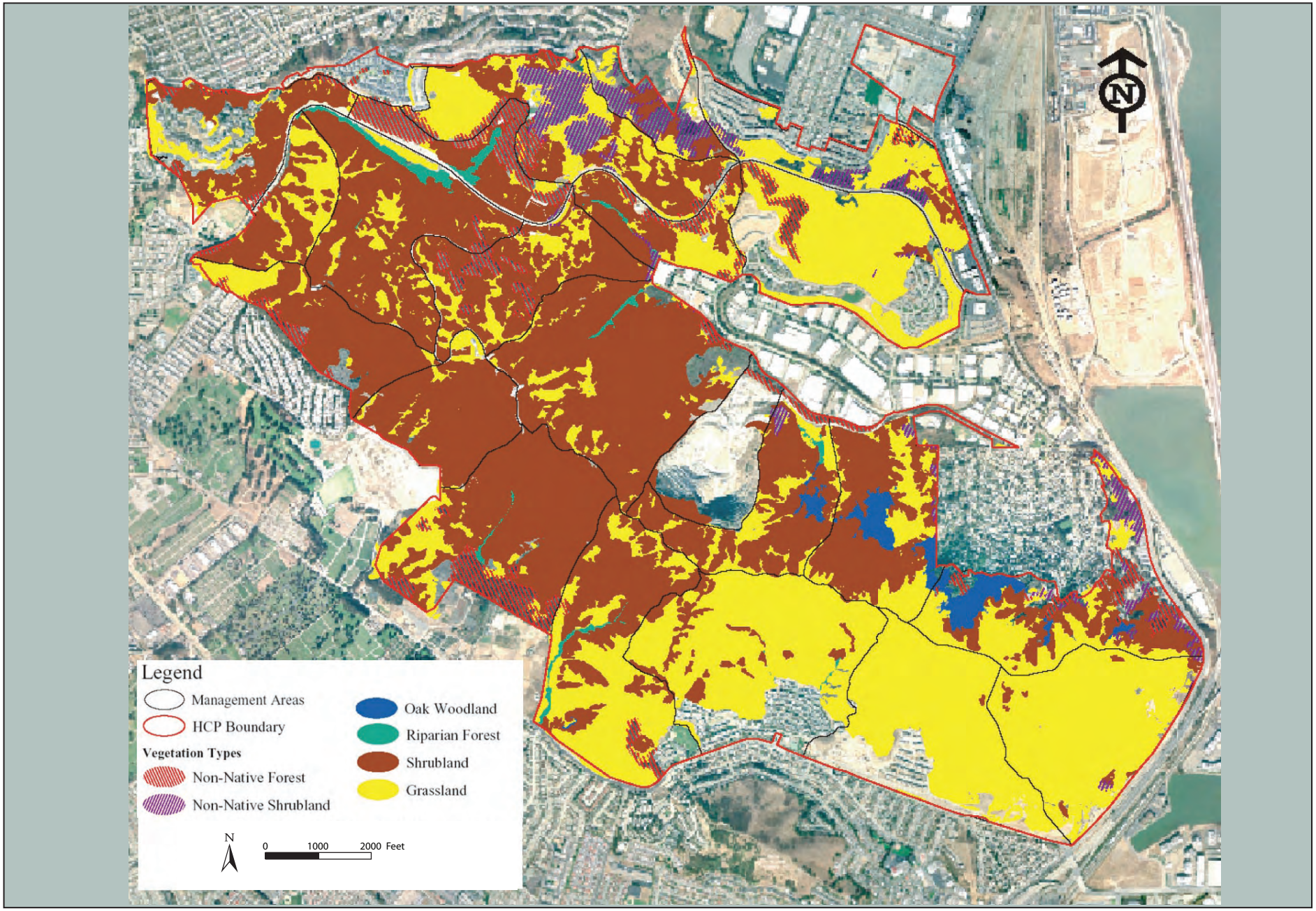


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**Figure 3-2**
**Major Vegeation, 2004**

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in San Mateo County. Colonies are located at sites ranging from 690 to 1,180-foot elevation. Some colonies occur in the fog belt of the coastal range. Coastal chaparral and coastal grasslands dominate the vegetation type where colonies are found (USFWS 2007a).

### Special Considerations

Threats to the mission blue include loss or disturbance of the remaining colonies on San Bruno Mountain. These include development of private lands that are designated for housing in the City of Pacifica General Plan (USFWS 2007a).

### San Bruno Mountain

Mission blues use a variety of native and nonnative species for nectaring (especially thistles) that are found throughout the grassland and coastal scrub plant communities on San Bruno Mountain. Suitable habitat containing lupine, adult nectar sources, and hilltops are found in and adjacent to the study area (USFWS 2006).

## San Bruno Elfin Butterfly

The San Bruno elfin butterfly (*Incisalia mossii bayensis*) was listed as an endangered species in 1976. Critical habitat was proposed in 1977, but was later withdrawn.

The San Bruno elfin is a small brownish butterfly in the gossamer-winged family (Lycaenidae). The adult flight period is late February to mid-April, with the peak flight period occurring in March and early April. Eggs are laid in small clusters or strings on the upper or lower surface of stonecrop (*Sedum spathulifolium*). Larvae hatch from the eggs within 5-7 days after they are deposited on the plant (USFWS 2007b).

### Distribution

The San Bruno elfin is found in coastal mountains near San Francisco Bay, in the fog-belt of steep north facing slopes that receive little direct sunlight. It lives near prolific growths of the larval food plant, stonecrop *(Sedum spathulifolium*), which is a low growing succulent. Stonecrop is associated with rocky outcrops that occur at 900-1075 feet elevation. The adult food plants have not been fully determined. Montara Mountain colonies are suspected to use Montara Mountain manzanita *(Arctostaphylos montaraensis*) and huckleberry (*Vaccinium ovatum*) (USFWS 2007b).

First described in 1962 near San Francisco, colonies are known today on San Bruno Mountain, Milagra Ridge and Montara Mountain of San Mateo County; Mount Diablo in Contra Costa County; and near Alpine Lake and at Dillon Beach in Marin County (USFWS 2007b).

### Special Considerations

Threats to the butterfly are increased urbanization in the area, loss of habitat by road construction, rock and sand quarrying and urban developments. Grazing and grassfire have encouraged the growth of exotic plants in the area. The San Bruno

Mountain HCP was developed for rare butterflies, including the San Bruno elfin butterfly (USFWS 2007b).

### San Bruno Mountain

All known populations of the San Bruno elfin on the Mountain are located on Radio Ridge and along the Southeast Ridge. Suitable habitat containing stonecrop and adult nectar sources are found in and adjacent to the study area (USFWS 2006).

## San Francisco Garter Snake

The San Francisco garter snake (*Thamnophis sirtalis tetrataenia*) is federally and state listed as threatened, and is fully protected under the California Fish and Game Code. A recovery plan was drafted for the San Francisco garter snake in September 1985.

The San Francisco garter snake is a slender, colorful snake in the Colubridae family, which includes most of the species of snakes found in the western United States. This subspecies has a burnt orange head, greenish-yellow dorsal stripe edged in black, bordered by a red stripe, which may be continuous or broken with black blotches, and then a black stripe. The belly color varies from greenish-blue to blue. Large adults can reach 3 feet or more in length (USFWS 2007c).

The snakes' preferred habitat is a densely vegetated pond near an open hillside where they can sun themselves, feed, and find cover in rodent burrows; however, considerably less ideal habitats can be successfully occupied. Essential habitat for a breeding population of San Francisco garter snakes includes shallow marshlands or slow-moving creeks with emergent vegetation (such as bulrushes (*Scirpus spp*.), cattails (*Typha spp*.), and spikerushes (*Juncus spp*.)); an adequate prey base including California red-legged frogs (*Rana aurora draytonii*) and Pacific treefrogs (*Hyla regilla*); and grassy uplands for basking, movement, and aestivation. Adult snakes sometimes estivate (enter a dormant state) in rodent burrows during summer months when ponds dry. Upland areas with an abundance of small mammal burrows are important as winter hibernation sites, though snakes may be active year-round (USFWS 2007c).

### Distribution

Historically, San Francisco garter snakes occurred in scattered wetland areas on the San Francisco Peninsula from approximately the San Francisco-San Mateo County line south along the eastern and western bases of the Santa Cruz Mountains, at least to the Upper Crystal Springs Reservoir, and along the coast south to Año Nuevo Point, San Mateo County, and Waddell Creek, Santa Cruz County. Currently, although the geographical distribution may remain the same, reliable information regarding specific locations and population status is not available (USFWS 2007c).

### Special Considerations

There are several factors that may be contributing to the decline of the San Francisco garter snake, including loss of habitat; management practices that do

not support life history requirements for the snake; the decline of the California red-legged frog (an essential prey species); and the introduction of bullfrogs (*Rana catesbeiana*) into San Francisco garter snake habitat; and by collectors removing snakes for illegal pet trade. Habitat fragmentation and loss can primarily be contributed to urbanization (USFWS 2006). Bullfrogs are capable of preying on both San Francisco garter snakes and California red-legged frogs. Extirpation of California red-legged frogs in San Francisco garter snake habitat is likely to cause localized extinction of the snake (USFWS 2007c).

### San Bruno Mountain

The San Francisco garter snake has not been observed on the Mountain since the 1970s and is believed extirpated (USFWS 2006).

## Callippe Silverspot Butterfly

The callippe silverspot butterfly (*Speyeria callippe callippe*) was proposed for listing in 1991, a proposed rule was published in 1994, and a final rule listing the species as endangered was published on December 5, 1997.

The callippe silverspot is a medium-sized butterfly in the brush foot family (Nymphalidae). It has a wingspan of about 2.25 inches. The upper wings are brown with extensive black spots and lines, and the basal areas are extremely dark. The undersides are brown, orange-brown and tan with black lines and distinctive black and bright silver spots. The basal areas of the wings and body are densely hairy. The caterpillars are dark-colored with many branching sharp spines on their backs (USFWS 2007d).

The callippe silverspot occurs in areas where the butterfly's larval food plant is located, where adult nectar plants are present, and on ridges and hilltops where courtship and mating take place. Figure 3-3 shows distribution of the callippe silverspot on the Mountain. The larval food plant, or host plant, for the callippe silverspot is the native viola (also called Johnny jump-up) (*Viola pedunculata).* Figures 3-4 and 3-5 show distribution of viola on the Mountain. The presence of this plant is required for the survival of the species. The callippe silverspot also requires the presence of adult nectar plants, such as coyote mint (*Monardella villosa*) and pincushion plant (*Scabiosa atropurpurea*). The callippe silverspot will utilize a variety of nectar plants, so long as the presence of a variety of suitable and abundant nectar plants are located in the same area as their host plant (the violet). The host and nectar plants for the callippe silverspot grow within grassland habitats on San Bruno Mountain. The callippe silverspot also requires high points on the landscape, typically ridges and hilltops, where courtship takes place. Males patrol hilltops searching for mates, and stake out and defend territories on hilltops. These topographic features are important for successful reproduction of the species (TRA Environmental Associates Inc. 2007).

### Distribution

The species was known historically to occur in seven populations in the San Francisco Bay region. The historical range included the inner coast range on the eastern shore of San Francisco Bay from northwestern Contra Costa County

south to the Castro Valley area in Alameda County. On the west side of the Bay, it ranged from San Francisco south to the vicinity of La Honda in San Mateo County. Five colonies, including the one located at Twin Peaks in San Francisco, were extirpated. The remaining colonies exist on mostly privately-owned land, but also on city, county, and State-owned land (USFWS 2007d).

Since 1988, callippe silverspot have been recorded at San Bruno Mountain and Sign Hill near South San Francisco (San Mateo County), in the hills near Pleasanton (Alameda County), at Sears Point (Sonoma County), and in the hills between Vallejo and Cordelia. The majority of the natural areas on San Bruno Mountain have been preserved and will remain undeveloped in perpetuity (USFWS 2007d).

### Special Considerations

The primary cause of the decline of the callippe silverspot is the loss of habitat from human activities. The species is imperiled by the current and potential future destruction and alteration of its habitat due to air pollution, off-road vehicle use, trampling by horses and hikers, unsuitable levels of livestock grazing, and invasive exotic vegetation. Huge increases in the human population have drastically altered the regional landscape, causing the callippe silverspot's decline and endangerment (USFWS 2006, USFWS 2007d).

### San Bruno Mountain

On San Bruno Mountain, there are two population centers of the callippe silverspot and adults regularly disperse between them. Of the two colonies on the Mountain, the Southeast Ridge usually has many more individuals than Guadelupe Hills. Some adult callippe silverspot also disperse from San Bruno Mountain to Sign Hill, and vice versa. Suitable habitat containing viola, adult nectar sources, and hilltops are found in and adjacent to the study area (USFWS 2006).

## Bay Checkerspot Butterfly

The bay checkerspot butterfly (*Euphydryas editha bayensis*) was listed as a federal threatened species in 1987. A recovery plan for serpentine soil species was adopted in September 1998.

The bay checkerspot is a medium-sized butterfly in the brush-footed butterfly family (*Nymphalidae*). It has a wingspan of little more than 2 inches. The forewings have black bands along all the veins on the upper surface, contrasting sharply with bright red, yellow and white spots (USFWS 2007e).

All habitat for the bay checkerspot exists on shallow, serpentine-derived or similar soils. These soils support the plants on which the caterpillars (*larvae*) feed. The primary larval host plant is dwarf plantain (*Plantago erecta*). In many years, the larvae require a second host plant when the plantain dries up. Under these conditions, the larvae move to purple owl's clover (*Castilleja densiflora* or *C. exserta*), which remains edible later in the season (USFWS 2007e). The USFWS designated Critical Habitat for the bay checkerspot on San Bruno

Source: TRA Environmental Sciences

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**Figure 3-3**
**Distribution Of Callippe Silverspot Butterfly Habitat, 2004**

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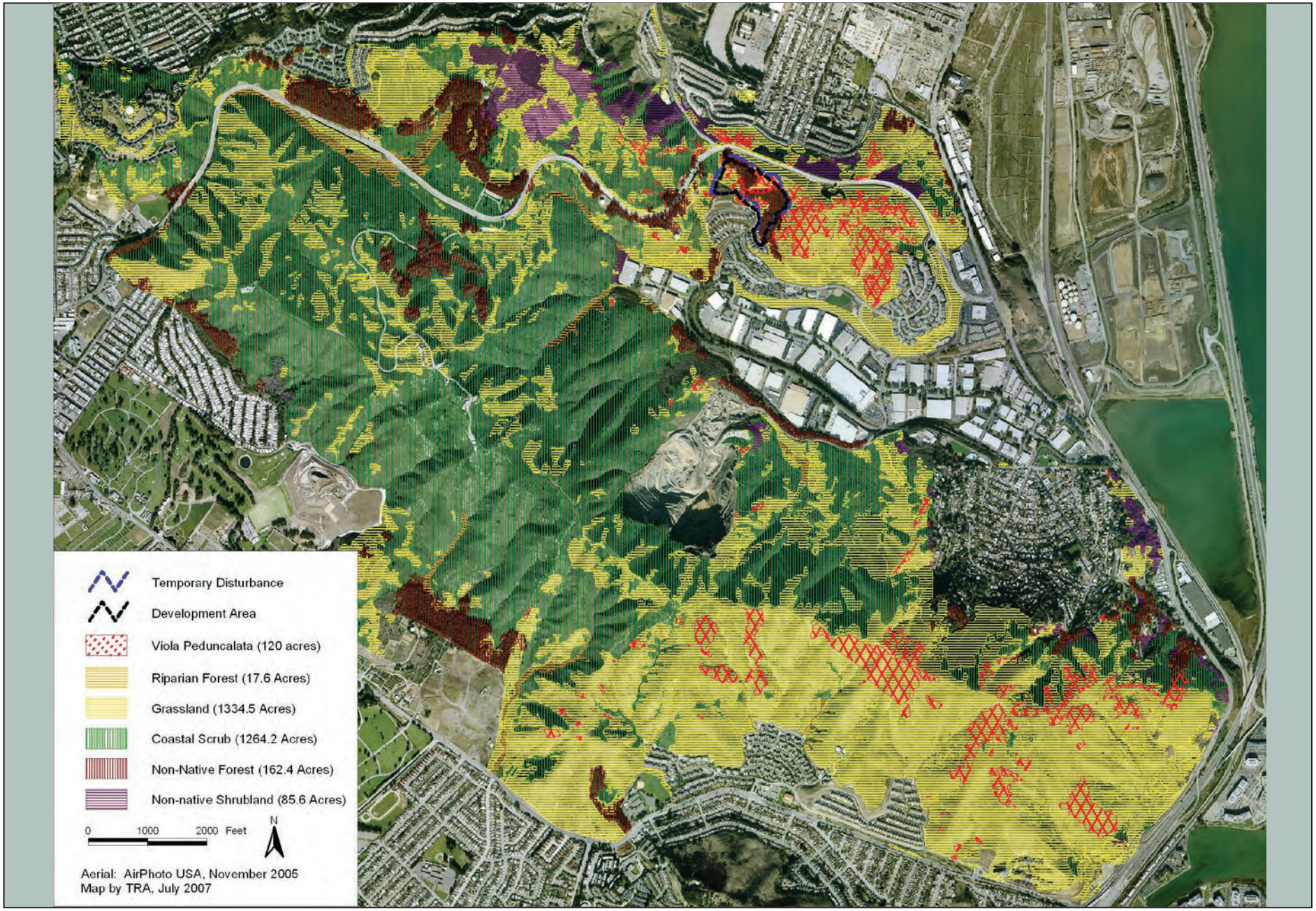


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**Figure 3-4**
**Distribution of Viola on San Bruno Mountain, 2005**

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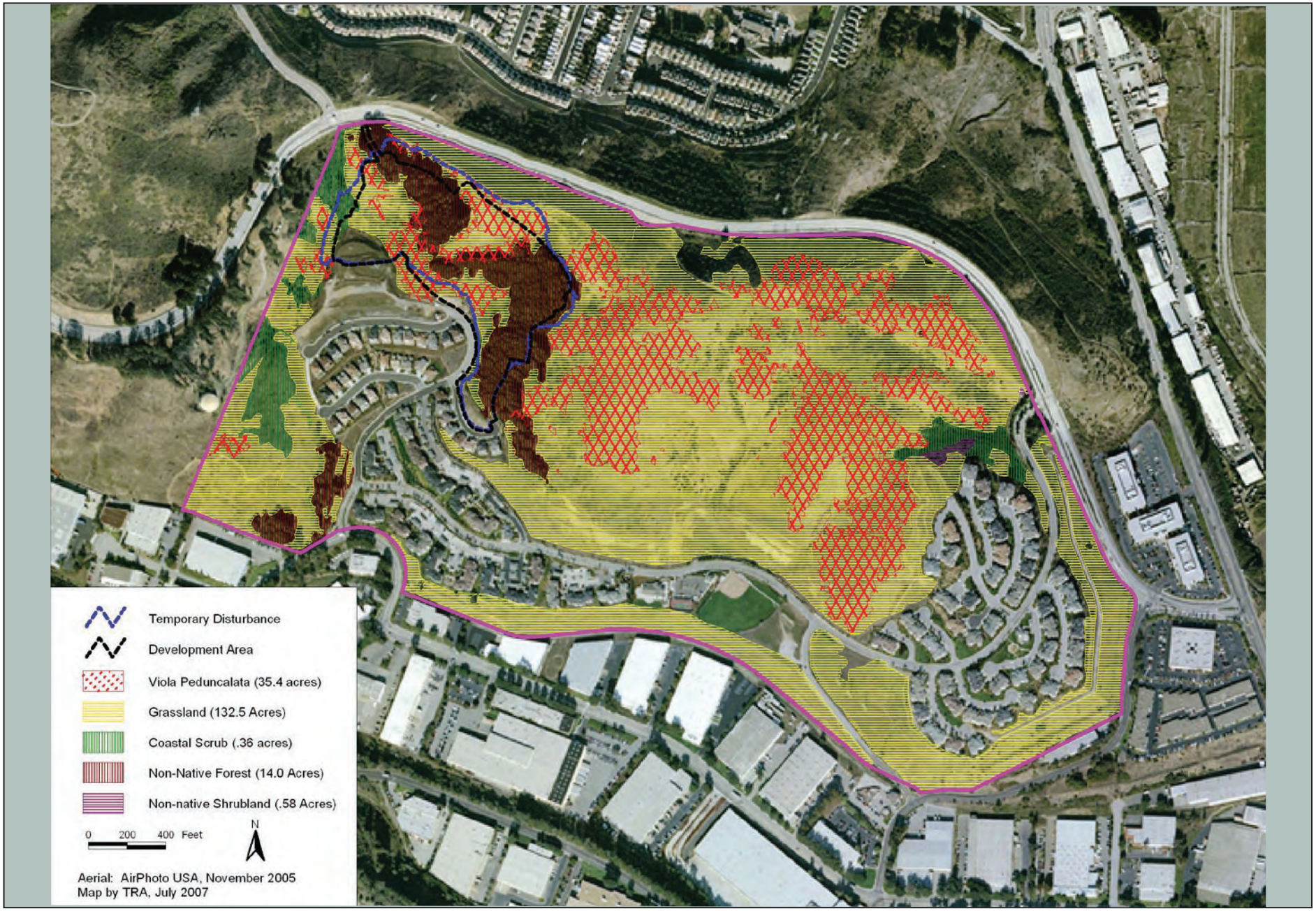


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**Figure 3-5**
**Distribution of Viola on Northeast Ridge, 2005**

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Mountain in 2001. Approximately 748 acres of the Mountain are designated Critical Habitat, situated mostly within San Bruno Mountain State and County Park. The acreage defined by the USFWS is located on the eastern half of the Mountain, and is located above the 500-foot elevation contour. Figure 3-6 illustrates the distribution of bay checkerspot Critical Habitat on the Mountain; there is no designated Critical Habitat on the Northeast Ridge parcel.

### Distribution

Historically, the bay checkerspot occurred east, west, and south of San Francisco Bay, from Twin Peaks in San Francisco and Mount Diablo in Contra Costa County south approximately to Hollister. Before the introduction of invasive Eurasian grasses and other weeds, which have reduced the abundance and distribution of its host plants, the distribution may have been wider. Currently, the range is much reduced and patchy. There are currently five known core areas—one on the San Francisco peninsula, one in San Mateo County, and four in Santa Clara County. However, any site with appropriate habitat within the historical range should be considered potentially occupied (USFWS 2007e).

### Special Considerations

The species is in long-term decline. Identifiable threats include urban and suburban sprawl and its attendant habitat destruction and fragmentation, invasion of nonnative plants, inappropriate management of grazing and fire, and extreme weather.

### San Bruno Mountain

The bay checkerspot has not been observed on the Mountain since the mid 1980s and is believed extirpated (USFWS 2006).

## California Red-Legged Frog

The California red-legged frog (*Rana aurora draytonii*) was listed as a federal threatened species in 1996. A recovery plan was drafted for the California red-legged frog on September 12, 2002.

The California red-legged frog is the largest native frog in the western United States, ranging from 1.5 to 5 inches in length. The abdomen and hind legs of adults are largely red; the back is characterized by small black flecks and larger irregular dark blotches with indistinct outlines on a brown, gray, olive, or reddish background color. The spots on the frogs' backs usually have light centers. Lateral folds are prominent on the back. Larvae (tadpoles) range from 0.6 to 3 inches in length, and the background color of the body is dark brown and yellow with darker spots (USFWS 2007f).

The diet of California red-legged frogs is highly variable. Larvae probably eat algae. Invertebrates are the most common food items of adult frogs. Vertebrates, such as Pacific tree frogs (*Hyla regilla*) and California mice (*Peromyscus californicus*) are frequently eaten by larger frogs. Juvenile frogs are active both during the day and at night, whereas adult frogs are largely nocturnal. Feeding activity likely occurs along the shoreline and on the surface of the water.

The California red-legged frog occupies a fairly distinct habitat, combining both specific aquatic and riparian components. The adults require dense, shrubby or emergent riparian vegetation closely associated with deep (greater than 2 1/3-foot deep) still or slow moving water. The largest densities of California red-legged frogs are associated with deep-water pools with dense stands of overhanging willows (*Salix* spp.) and an intermixed fringe of cattails (*Typha latifolia*). Well-vegetated terrestrial areas within the riparian corridor may provide important sheltering habitat during winter (USFWS 2007f).

#### Distribution

The historical range of the California red-legged frog extended along the coast from the vicinity of Point Reyes National Seashore, Marin County, California, and inland from the vicinity of Redding, Shasta County, California, southward to northwestern Baja California, Mexico. California red-legged frogs have been documented in 46 counties in California, but now remain in only 238 streams or drainages in 31 counties.

California red-legged frogs are still locally abundant within portions of the San Francisco Bay area (including Marin County) and the central coast. Within the remaining distribution of the species, only isolated populations have been documented in the Sierra Nevada, northern Coast, and northern Transverse ranges. (USFWS 2007f).

#### Special Considerations

California red-legged frogs are currently threatened by human activities: degradation and loss of its habitat through urbanization, mining, improper management of grazing, recreation, invasion of nonnative plants, impoundments, water diversions, degraded water quality and introduced predators. These factors have resulted in the isolation and fragmentation of habitats within many watersheds. This often prevents dispersal between sub-populations. The fragmentation of existing habitat, and the continued colonization of existing habitat by nonnative species, may represent the most significant current threats to California red-legged frogs (USFWS 2007f).

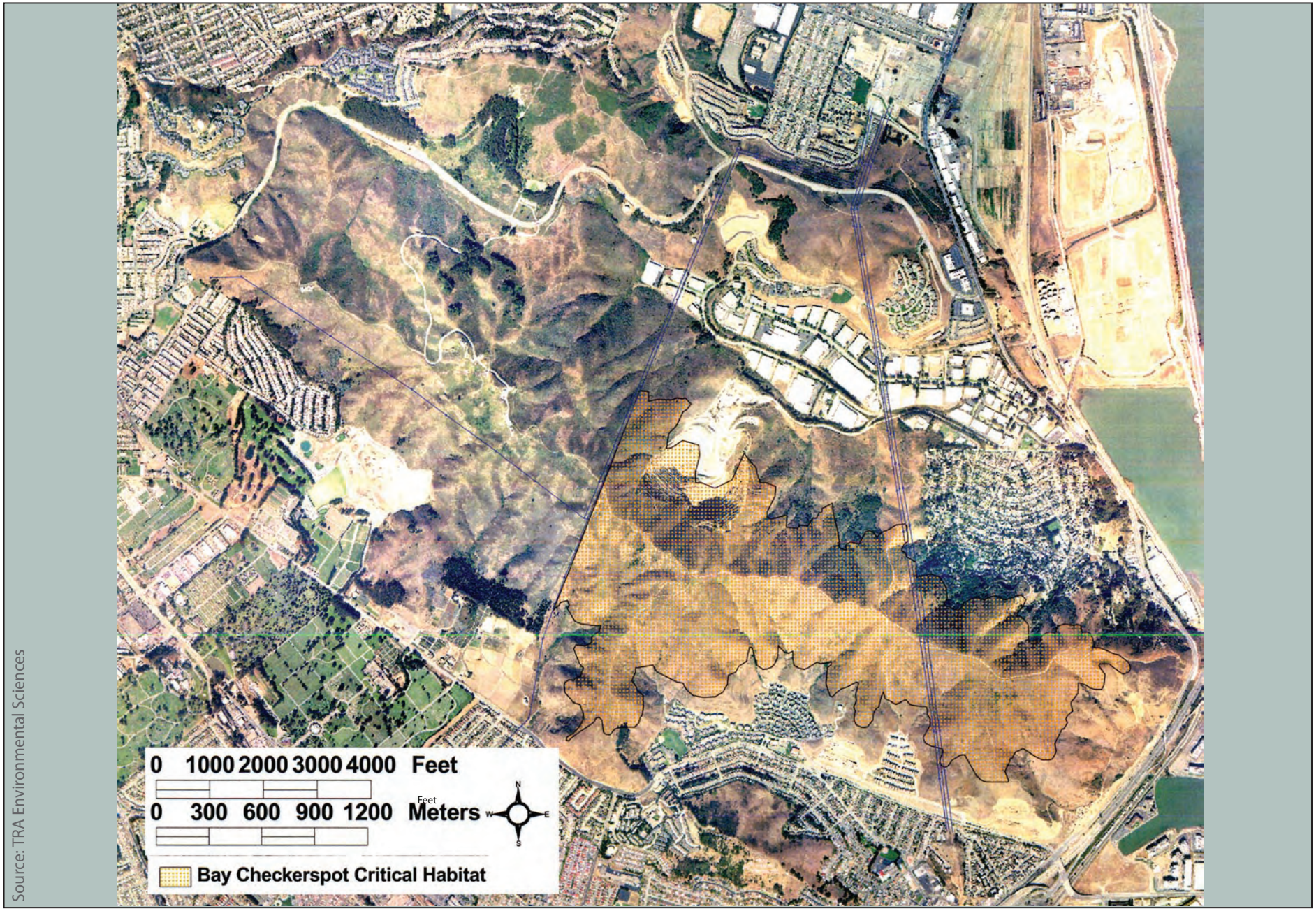
#### San Bruno Mountain

The California red-legged frog has not been observed on the Mountain since the 1970s and is believed extirpated (USFWS 2006).

# 3.4 Social Environment

## Land Use

Existing land uses on the Mountain include: a 2,600 acre State and County Park, an active rock quarry, telecommunications and public utility facilities, and residential and commercial development. The County of San Mateo and the DFG jointly control the State and County Park.




Source: TRA Environmental Sciences

0049.07 EA (04-07)

Jones & Stokes

**Figure 3-6**
**Distribution of Bay Checkerspot Critical Habitat**

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Since 1983 when the HCP was authorized, most of the development authorized has been constructed. Only one planned project, the Northeast Ridge's phase two neighborhoods (UII-NI and UII-NII ) have not yet gone forward. Refer to Chapter 2 for the current status of land development on the Northeast Ridge. The Northeast Ridge is adjacent to the Crocker Industrial Park, which includes high tech offices and distribution facilities. The Guadalupe Valley Quarry sits opposite of the Northeast Ridge across the Industrial Park.

# Cultural Resources

Three aboriginal sites are known on San Bruno Mountain. All are marked by shell mounds. It is likely the shell midden sites found on the Mountain are relicts from the Ohlone tribe, Costanoan dialect group, since they were known to have occupied the San Francisco Bay, Sacramento, and Point Sur areas. Activities of this tribe included hunting, fishing, gathering, and trading with other nearby Native American tribes. During the Mission period, which lasted from about 1770 to 1835, the Ohlone worked for the Missionaries and ultimately left the Mountain area (County of San Mateo 1982).

The first Europeans saw San Bruno Mountain in 1769 during the Portola Expedition. The Mountain was named for Saint Bruno, the patron saint of Bruno Hecata. In 1776, the Mountain became a rancho and underwent a number of different ownerships. The most prominent of these was Jacob P. Leese, who owned most of Rancho Canada de Guadalupe, la Visitacion y Rodeo Viejo. In 1872, Visitacion Land Company became the next prominent owner, and in 1884, Crocker Land Company acquired a majority of the Mountain (County of San Mateo 1982).

Several possible historical sites are located within the County Park boundaries. These include an abandoned Nike base at the top of Radio Ridge, remnants of World War II bunkers, and a lone Chinese gravestone which may have been removed to its present location by vandals.

# Noise

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. Noise can be defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an ambient sound level. The decibel (dB) scale is used to quantify sound intensity. The A-weighted decibel (dBA) scale is an overall frequency-weighted sound scale that approximates the frequency response of the human ear.

Because it is surrounded by urban development, the noise environment on San Bruno Mountain is varied. Noise generators adjacent to the Mountain include air

traffic from San Francisco International Airport, automobile traffic on Highway 101, operations at the Guadalupe Valley Quarry site, and commercial/industrial activities on South Hill Drive.

### Noise-Sensitive Land Uses

Noise-sensitive land uses are land uses such as residences, schools, libraries, hospitals, and other similar uses where noise can adversely affect use of the land. Noise-sensitive land uses in the vicinity of the Mountain may include residential development within the cities of Brisbane, Daly City, and South San Francisco, as well as visitors and recreators to the State and County Park.

## Public Health Hazards

Public health hazards include additional environmental hazards that may prove dangerous to local residents.

### Wildland Fires

According to the California Department of Forestry, three aspects determine the severity of a fire hazard: fuel loading (the amount of flammable vegetation and other fuels); fire weather (incidence of dry, hot, and windy weather); and steep slopes (hillsides where fire can burn quickly up the slope). During the annual dry season and during long-term drought conditions, wildland fires are a concern on the Mountain. Although it is primarily a grassland habitat, the Mountain contains many species of woody vegetation that pose a moderate to extreme fire hazard under these conditions (City of Brisbane 1994).

The County's Historical Fire Perimeters mapping shows several large fires on the Mountain since 1950 (San Mateo County 2007). The Fire Perimeters data consists of California Department of Forestry fires 300 acres and greater in size and U.S. Forest Service fires 10 acres and greater throughout California from 1950 to 2003. All of the communities adjacent to the Mountain—the County of San Mateo and cities of Brisbane, Daly City, and South San Francisco—are at risk for urban-interface fire hazards.

### Vector Control

San Bruno Mountain's open space is home to many animals, including rats and mice. These rodents have the potential to spread a wide variety of diseases including sylvatic plague, trichinosis, hantavirus, and bacterial food poisoning. Although evidence of the plague has been continually detected among the meadow mouse and the white-footed mouse on the Mountain in the last 35 years, there have been no reports of disease from these rodents. The San Mateo County Public Health and Environmental Protection Division, Vector Control Unit,

provides services to monitor the spread of infectious disease and provides education about vector control to cities within the County.

# Public Services and Utilities

## Fire Protection and Emergency Services

Fire protection and emergency services are provided to the Mountain by the CDFFP and the North County Fire Authority (Authority). The City of Brisbane is a member of the Authority, which provides fire and emergency response to residential development at the Northeast Ridge.

The Authority provides fire protection services to over 185,000 people within an approximately 60 square mile area, including the Cities of Brisbane, Daly City, and Pacifica. The Authority has a total of 150 employees, two battalion chiefs, one deputy chief, and a minimum of 32 personnel on duty every day. The Authority has eight engine companies, one truck company, and one ambulance/transport.

## Police Protection

The County's Office of the Sheriff (Sheriff) provides primary law enforcement services for the Mountain. The Sheriff is a full service law enforcement agency that engages in dispatch, patrol, investigations, narcotics enforcement, criminal laboratory analysis, and other emergency and administrative services (LSA Associates 2001). Additionally, the City of Brisbane Police Department provides law enforcement services to the residential development at the Northeast Ridge.

## Schools

The school districts serving residential populations on the Northeast Ridge include the Brisbane Elementary School District (BESD) and Jefferson Union High School District (JUHSD).

The BESD serves approximately 600 kindergarten through eighth grade students from the City of Brisbane, the Southern Hills portion of Daly City, and the northeastern portion of South San Francisco. The BESD operates two elementary schools and one middle school. Student enrollment in the District reached a peak of 673 students in the 2002-2003 school year. However, enrollment declined to 609 students during the 2004-2005 school year.

High school education is provided by the JUHSD, which includes four high schools. The District has an open enrollment policy as long as maximum enrollments have not been met. As of Summer 2006, Westmoor High School

could not accept new enrollees. The other three high schools have additional student capacity.

## Parks and Recreation

San Bruno Mountain State and County Park provides open space and recreation opportunities for residents throughout the region. Additionally, the cities of Daly City, Brisbane and South San Francisco provide neighborhood and community parks for local residents. Brookfield Northeast Ridge II LLC has also constructed a neighborhood park and several community buildings that will serve the residents of the Northeast Ridge.

## Water Supply

Water supply and distribution utilities within the Mountain study area include the City of Brisbane, GVMID, and San Francisco Public Utilities Commission (SFPUC). The City of Brisbane receives 100 percent of its water from the SFPUC through five turnouts along the 44-inch Crystal Springs #1 pipeline and the 60-inch Crystal Springs #2 pipeline. Under normal conditions, water comes directly from the Hetch Hetchy Reservoir in Yosemite National Park. Occasionally, the water may be supplemented or come directly from the East Bay or Peninsula reservoirs. The City does not rely on groundwater for water supply.

## Wastewater

Wastewater collection and treatment is provided to the study area by the City of Brisbane, GVMID, the Bayshore Sanitary District, and SFPUC. The City of Brisbane contracts with the SFPUC to treat wastewater. Wastewater from the City of Brisbane is conveyed to the Southeast Treatment Plant in San Francisco. In addition to the City of Brisbane, the treatment plant provides wastewater treatment service for the east side of San Francisco and currently treats an average dry weather flow of about 67 million gallons per day (mgd) and has the capacity to treat up to 250 mgd during wet weather flows (SFPUC 2006). The Southeast Treatment Plant has a design capacity of 84 mgd dry weather flow. Treated wastewater from dry weather flows is discharged into the San Francisco Bay through a pipe reaching 800 feet into the Bay.

The City of Brisbane has a contract with the SFPUC for treatment of 6.7 mgd peak wet weather discharge, and base sanitary sewer flow for existing conditions in the 2003 Sewer Master Plan was projected to be 0.334 mgd for the City's service area (Breault pers. comm.). Base sanitary sewer flow levels for build-out conditions outlined in the General Plan for 2020 are projected to increase to 0.537 mgd, with the majority of future flow increases expected to come from planned developments.

### Solid Waste

Solid waste collection and disposal services are provided to the study area by the South San Francisco Scavenger Company (SSFSC). The SSFSC provides solid waste collection and disposal service in the City of Brisbane. Solid waste is transported to the Ox Mountain Sanitary Landfill, located near Half Moon Bay. The Ox Mountain Sanitary Landfill is permitted to dispose of mixed municipal waste and construction debris and has remaining capacity of 44,646,000 cubic yards with an estimated closure date in 2018 (California Integrated Waste Management Board 2006).

### Natural Gas and Electricity

Gas and electric services are provided to the study area by the Pacific Gas and Electric Company (PG&E).

## Transportation

The major components of the transportation network in the vicinity of the Mountain include the following:

- **U.S. Highway 101.** U.S. Highway 101 is an eight-lane north-south freeway located east of the Mountain. Highway 101 provides the main regional north-south access to northeastern San Mateo County.
- **Bayshore Boulevard.** Bayshore Boulevard is a six-lane north-south divided arterial with striped and raised medians running parallel and to the west of U.S. Highway 101.
- **Guadalupe Canyon Parkway.** Guadalupe Canyon Parkway is a four-lane east-west undivided roadway that winds through the San Bruno Mountain State and County Park, from Daly City to the west terminating in Brisbane to the east.

### Level of Service Standard

Level of service (LOS) is the primary measurement used to determine the operating quality of a roadway segment or intersection. In general, LOS is measured by the ratio of traffic volume to capacity (v/c) or by the average delay experienced by vehicles on the facility. The quality of traffic operation is graded into one of six LOS designations, A, B, C, D, E, or F, with LOS A representing the best range of operating conditions and LOS F representing the worst.

The 1994 City of Brisbane General Plan has established transportation system performance standards for its roadway systems. The adopted standard for most of its intersections is LOS D. Guadalupe Canyon Parkway, the main thoroughfare

across the Mountain, has an average daily traffic volume of 11,600 vehicles (PG&E 2003).

# Population and Socioeconomic Conditions

The U.S. Census Bureau reported that the County of San Mateo population was approximately 689,300 in year 2005 (U.S. Census Bureau 2005). The Association of Bay Area Governments (ABAG) projects that it will reach 848,400 by 2030, an increase of 23% (ABAG 2005).

## Disadvantaged Communities

The Council on Environmental Quality has developed guidance for quantifying disadvantaged communities under NEPA. Low-income populations are defined as those with income below the annual statistical poverty thresholds from the U.S. Department of Health and Human Services. Minority populations are defined as American Indian or Alaskan Native, Asian or Pacific Islander, Black, or Hispanic populations exceeding 50% of the general population.

In San Mateo County, median household income was $74,546 and median family income was $82,376 in 2005 (U.S. Census Bureau 2005). Per capita income was estimated at $38,988. At that time, 7.4% of individuals and 4.7% of families in the County were below the annual statistical poverty threshold. Race distribution in the County included nearly 60% white (412,421), 3% black or African American (20,188), and 23% Asian (160,562), as well as 23% Hispanic or Latino (155,964) (U.S. Census Bureau 2005).

Although scattered pockets of disadvantaged communities are located throughout the County, the provision of 3,600 acres of open space on San Bruno Mountain lends significant recreational opportunities to those populations.

Chapter 4

# Environmental Consequences

## 4.1 Introduction

This chapter analyzes the effects on the human environment that could result from implementing the Proposed Action, the 1989 Northeast Ridge Plan Alternative, and the No Action Alternative. This chapter focuses on environmental impacts that could potentially occur on and around the Mountain, with specific reference to the following topics.

- Physical environment—visual resources; air quality; geology, seismicity, and soils; hydrology and water quality; and hazardous materials.
- Biological environment—vegetation and wildlife.
- Social environment—cultural resources; land use and agricultural resources; noise; public health hazards; public services and recreation; transportation; and population and socioeconomic conditions.

The Proposed Action, the 1989 Northeast Ridge Plan Alternative, and the No Action Alternative are described in detail in Chapter 2. The existing environmental conditions that provide the baseline for this analysis are described in Chapter 3. The analysis considers potential impacts of development focused on the Northeast Ridge and vegetation management across the entire Mountain.

### Direct, Indirect, and Cumulative Impacts

Implementation of the proposed HCP amendment could result in direct, indirect, or cumulative impacts on the Mountain. *Direct impacts* are those effects of a project that occur at the same time and place as project implementation, such as removal of habitat from ground disturbance. *Indirect impacts* are those effects of a project that occur either later in time or at a distance from the project location but are reasonably foreseeable, such as loss of aquatic species from upstream effects on water quality.

Direct and indirect impacts can also vary in duration and result in temporary, short-term, and long-term effects on biological resources. A *temporary* effect would occur only during the activity. A *short-term effect* would last from the

time an activity ceases to some intermediate period of approximately 1 to 5 years (i.e., repopulation of habitat following restoration). A *long-term or permanent effect* would last longer than 5 years after an activity ceases. Long-term effects may be the result of ongoing maintenance and operation of a project, or may result in a permanent change in the condition of a resource, in which case it could be considered a permanent effect.

# Referenced Documents

The discussions of environmental consequences below reference the following past environmental documents:

- Adoption and Implementation of San Bruno Mountain Habitat Conservation Plan and Endangered Species Act Section 10(A) Permit, Final Environmental Impact Report and Environmental Assessment (County of San Mateo and U.S. Fish and Wildlife Service 1982)—referenced as “1982 EIR/EA”
- Northeast Ridge Development of San Bruno Mountain Final Environmental Impact Report (County of San Mateo and City of Brisbane 1982), certified February 1983—referenced as “1983 EIR”
- Northeast Ridge Project Brisbane, California, Addendum to the Final Environmental Impact Report and Response to Comments (City of Brisbane 1989a)—referenced as “1989 Addendum”
- Northeast Ridge Project Equivalent Exchange Amendment to the San Bruno Mountain Habitat Conservation Plan, Addendum to Final Environmental Impact Report and Supplement to Environmental Assessment on Implementation of the San Bruno Mountain Habitat Conservation Plan and Endangered Species Act Section 10(a) Permit (City of Brisbane 1989b)—referenced as “1989 Supplement”
- Intra-Service Biological Opinion on the Effect of the Proposed Continued Implementation and Amendment of the San Bruno Mountain Habitat Conservation Plan (U.S. Fish & Wildlife Service 2006)—referenced as “2006 Biological Opinion”
- Vesting Tentative Map 1-06, Vesting Tentative Map and Preliminary Grading Plan, Northeast Ridge, Landmark at the Ridge, Unit II-Neighborhood II (City of Brisbane 2007a)—referenced as “2007 VTM”

All mitigation measures identified in these documents would be incorporated into the Proposed Action. The Plan Operator, County of San Mateo, City of Brisbane, and Brookfield Northeast Ridge II LLC would each implement the appropriate mitigation measures contained in Table 4-1 (at end of chapter).

## Format of Chapter

The assessment and discussion of environmental consequences in this chapter are organized under each impact heading as follows.

- **Alternative 1—Proposed Action.** Assessment of 1) reconfiguration of the Northeast Ridge development plan and Conserved Habitat per the 2007 VTM and 2) enhanced vegetation management and monitoring activities on Conserved Habitat due to supplementary funding. Management activities would occur in butterfly habitat per authorization for take of the callippe silverspot and bay checkerspot.
- **Alternative 2—1989 VTM.** Assessment of development under the previously authorized 1989 VTM and continuation of habitat management and monitoring under the existing funding program (identical to Alternative 3). Vegetation management is presumed occur in areas of butterfly habitat per authorization for take of the callippe silverspot and bay checkerspot.
- **Alternative 3—No Action.** Assessment of continued vegetation management and monitoring under the existing funding program. Certain types of habitat management would continue to be prohibited in areas of butterfly habitat due to lack of take authorization.

A summary of significance conclusions for all three alternatives is included for reference in Table 4-2 (at end of chapter).

# 4.2 Effects on the Physical Environment

## Effects on Visual Resources

The following analysis documents that potential impacts pertaining to visual resources are not considered significant, because they would not result in any of the subsequent conditions.

- Have a substantial adverse effect on a scenic vista.
- Substantially degrade the existing visual character or quality of the site and its surroundings.
- Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

### Changes in Scenic Vista

#### Alternative 1—Proposed Action

##### Reconfiguration of the Northeast Ridge

Due to the conversion of 19.64 acres of undeveloped land (16.67 acres of permanent disturbance and 2.97 acres of revegetated land) from eucalyptus

removal and subsequent housing construction, this project would affect scenic views. However, because the majority of existing residential development has already been constructed in the vicinity of UII-NII, the resulting urbanization of undeveloped land and diminished views of open space in this portion of Brisbane would be minimal. The proposed changes would result in a total increase of 4.97 acres of permanently disturbed area at the UII-NII site compared to the 1989 VTM. However, no development would take place at the 21.20-acre UII-NI neighborhood and it would remain as vegetated grassland. Therefore, the total permanent conversion of land to urban uses within the Northeast Ridge would be considerably less (8.93 fewer acres) than proposed in the 1989 VTM and the overall impact on scenic views would decrease as a result of the proposed changes. Additionally, the 2007 VTM includes smaller lots resulting in a more compact development, and the proposed housing would not project above the ridgeline. These changes would both reduce the visual impact to the viewshed.

Removal of portions of the existing eucalyptus grove would also alter neighboring views of the Mountain. Tree removal may open up new scenic vistas or remove screening for potentially unsightly views. The removal area, however, would then be graded and prepared for construction of UII-NII. Finally, a small (1.07 acre) area of undisturbed land was already graded for roadway construction, infrastructure improvements, and slope stabilization near Unit I. Considering the relative size of the development area to the Mountain's Conserved Habitat, longer-term changes in viewsheds due to eucalyptus removal, infrastructure grading, and subsequent housing construction are minor. Mitigation measures in the 1982 EIR/EA would still apply (refer to Table 4-1). This impact is ***not significant***. No further mitigation is required.

### Management and Monitoring of Conserved Habitat

Changes in views may occur periodically as vegetation management occurs on the Mountain. Removal of invasive species, namely trees or woody vegetation, could potentially affect views by resulting in a denuded landscape until new pioneer species are established. Hand work, herbicide application, and mechanical clearing could all result in small clearings and dying patches of vegetation. Additionally, prescribed, micro, or pile burning could all result in temporarily blackened areas on the Mountain. These impacts to visual resources from vegetation management activities, while perhaps annoying to adjacent residents, would be temporary and irregular. Therefore this impact is ***not significant***. No mitigation is required.

## Alternative 2—1989 Northeast Ridge Plan

Development under the 1989 VTM would result in conversion of 40.00 acres of undeveloped land (25.60 acres of permanent disturbance and 14.40 acres of revegetated land). Changes in scenic views of the Mountain would occur at both the UII-NI and UII-NII neighborhood sites. The 1989 VTM results in greater development impacts than Alternative 1. An additional 80 housing units, or 8.93 acres of developed lands, would be constructed under Alternative 2 compared to the 2007 VTM. This would result in more expansive visual resources impacts. Alternative 2 would also include indirect impacts associated with existing habitat management and monitoring efforts, including minor disturbances in the

appearance of vegetation. Overall, management levels would be the same as Alternative 3 because available funding would be virtually the same. With implementation of mitigation measures in the 1982 EIR/EA (refer to Table 4-1), this impact is ***not significant***.

### Alternative 3—No Action

The No Action Alternative would not result in any changes in land use. Continuation of existing management and monitoring activities would result in small disturbances in the Mountain's vegetation, as currently occurs. However, impacts to scenic vistas would be minimal. Therefore this impact is ***not significant***. No mitigation is required.

## Existing Visual Character

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

Implementation of the 2007 VTM would result in the conversion of 19.64 acres of undeveloped land for eucalyptus removal and subsequent housing construction, and would likely change the views of open space at the site. However, because the majority of the existing residential development has been developed in the vicinity of UII-NII, the resulting urbanization of undeveloped land and diminished views of open space in this portion of Brisbane would be minimal. Additionally, because the reconfiguration of UII-NII would result in more compact design and UII-NI would not be developed, changes in the character of the site and its surroundings would be reduced. Finally, a small (1.07 acre) area of undisturbed land was already graded for roadway construction, infrastructure improvements, and slope stabilization near Unit I. Considering the relative size of the development area to the Mountain's Conserved Habitat, longer-term changes in visual character due to eucalyptus removal, infrastructure grading, and subsequent housing construction are minor. With the implementation of the proposed design and landscaping guidelines in the 1989 VTM and the mitigation measures set forth in the 1983 EIR and 1989 Addendum (refer to Table 4-1), this impact is ***not significant***. No further mitigation is required.

#### Management and Monitoring of Conserved Habitat

As stated above, the visual character of the Mountain may be impacted periodically as vegetation management occurs. Revegetation and management of the landscape for annual grasslands may alter the visual character of the Mountain, as existing shrub vegetation is darker in color and changes less with the seasons. Hand work, herbicide application, and mechanical clearing could all result in small clearings and dying patches of vegetation. Additionally, prescribed, micro, or pile burning could all result in temporarily blackened areas on the Mountain. However, such adjustments to the landscape cover would be incremental and not likely noticeable by adjacent residences and/or Park visitors. Therefore this impact is ***not significant***. No further mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

Development under the 1989 VTM would result in permanent conversion of 25.60 acres of undeveloped land for construction of 151 new housing units. Changes in visual character of the Mountain would occur at both the UII-NI and UII-NII neighborhood sites. The 1989 VTM results in greater development impacts than Alternative 1. An additional 80 housing units, or 8.93 acres of developed lands, would be constructed under Alternative 2. This would result in more expansive visual resources impacts. Alternative 2 would also include indirect impacts associated with existing habitat management and monitoring efforts, including minor disturbances in the appearance of vegetation. With implementation of mitigation measures in the 1982 EIR/EA (refer to Table 4-1), this impact is ***not significant***.

### Alternative 3—No Action

The No Action Alternative would not result in any changes in land use. Continuation of existing management and monitoring activities would result in small disturbances in the Mountain's vegetation, as currently occurs. However, impacts to visual character would be ***not significant***. No mitigation is required.

## Substantial Light or Glare

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

Construction of UII-NII would include 71 new dwelling units. These dwelling units would produce a variety of light and glare due to reflective building materials, windows, and night lighting. The number of homes within UII-NII would increase by 11 units with the 2007 VTM; however, the overall dwelling unit count within the entire Northeast Ridge would decrease by 80 units compared to the 1989 VTM. This decrease in dwelling units would result in a decrease in light and glare associated with the level of development proposed in the 1989 VTM. Light and glare impacts were not identified as significant issues in the 1983 EIR and 1989 Addendum, and the proposed project would reduce the frequency or intensity of any such effects. Therefore this impact is ***not significant***. No mitigation is required.

#### Management and Monitoring of Conserved Habitat

Management and monitoring activities on the Mountain would not result in generation of light and glare. There would be ***no impact***. No mitigation is necessary.

### Alternative 2—1989 Northeast Ridge Plan

Construction of UII-NI and UII-NII under the 1989 VTM would include 151 dwelling units. These dwelling units would produce a variety of light and glare due to reflective building materials, windows, and night lighting. Development

under the 1989 VTM would result in greater development impacts than Alternative 1. An additional 80 housing units would be constructed under Alternative 2. Alternative 2 would also include indirect impacts associated with existing habitat management and monitoring efforts, including minor disturbance in the appearance of vegetation. With implementation of mitigation measures in the 1982 EIR/EA (refer to Table 4-1), this impact is ***not significant***. No further mitigation is required.

### Alternative 3—No Action

The No Action Alternative would not result in any changes in land use. There would be ***no impact*** to light and glare conditions. No mitigation is necessary.

# Effects on Air Quality

The following analysis documents that potential impacts pertaining to air quality are not considered significant, because they would not result in any of the subsequent conditions.

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Expose sensitive receptors to substantial pollutant concentrations.

## Applicable Air Quality Plan

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

BAAQMD's air quality plans use the assumptions and projects of local planning agencies to determine control strategies for regional compliance status. Since the plans are based on local General Plans, projects that are deemed consistent with the applicable General Plan are usually found to be consistent with the air quality plans. The proposed 2007 VTM is consistent with growth anticipated under the City's 1994 General Plan and falls within the population projections prepared by the Association of Bay Area Governments (ABAG); therefore, the project would not conflict with implementation of an applicable air quality plan. Therefore this impact is ***not significant***. No mitigation is required.

#### Management and Monitoring of Conserved Habitat

Because the Plan Operator would implement all relevant BAAQMD control measures identified in the 2000 Clean Air Plan, vegetation management and monitoring activities are in compliance with local and regional plans. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). Therefore this impact is ***not significant***. No further mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

The 1989 VTM is consistent with growth anticipated under the City's General Plan and falls within the population projections prepared by ABAG; therefore, the project would not conflict with implementation of an applicable air quality plan. Additionally, minor emissions resulting from vegetation management and monitoring activities would comply with BAAQMD's air quality plan. Implementation of mitigation measures in the 1982 EIR/EA would reduce this impact to ***not significant***. No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would include no construction activities. Therefore, there would be no construction-related change from existing levels of criteria pollutant emissions within the study area. Management activities may generate minor air emissions during use of electric or gas-powered motors (for mowing or weed trimming). However, vegetation management and monitoring efforts would comply with BAAQMD's air quality plan. This impact is ***not significant***. No mitigation is required.

## Air Quality Standard Violation

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

As of 2006, the Bay Area had not achieved attainment status for State and federal ozone standards nor State PM10 and PM2.5 standards. Vehicular traffic, construction and infrastructure grading activity, and secondary sources (such as the operation of landscaping elements, pesticide spraying, paints, solvents, power generation, and painting) are contributing factors to these air pollutants, especially ozone and PM10. Construction of UII-NII would include 71 dwelling units, which would contribute to ozone and particulate emissions. However, the 2007 VTM proposes 80 fewer housing units than the 1989 VTM and would result in less vehicular traffic and the production of fewer secondary sources. Applicable mitigation measures in the 1983 EIR would apply to the proposed project (refer to Table 4-1). In addition, the City's General Plan requires the strict enforcement of the City's Grading Ordinance provisions for dust control (Program 202a) and the conformance to BAAQMD recommended dust control measures (Program 202b). These measures would decrease potential air quality impacts to lower levels than identified in the 1983 EIR or 1989 Addendum. Therefore this impact is ***not significant***. No further mitigation is required.

#### Management and Monitoring of Conserved Habitat

Although prescribed burns were included in the 1983 HCP, they have not generally been used on the Mountain. Increased funding for habitat management activities may expand use of burning as a viable management technique. Prescribed burning, including small-scale vegetation burns and pile burning, can significantly degrade localized air conditions. Additionally, localized air quality

can be compromised from wildfires that have escaped from prescribed management burning. Smoke and particulates released from both planned and accidental fires have the potential to violate the BAAQMD's air quality standards. However, the Plan Operator would comply with BAAQMD regulations, including Regulation 5, which applies to open burning and addresses jurisdictional authority, timing of burns, and preparation of smoke management plans. Use of gas mowers, weed trimmers, chain saws, tractors, and other electric or gas-powered equipment for vegetation management may also result in minor emissions. However, these emissions would be temporary and sporadic, and would not result in a violation of air quality standards. The 1982 EA/EIR mitigation measures, including proper fuel preparation and limiting burns to "burn days" as required by the BAAQMD, shall continue to be implemented on the Mountain (refer to Table 4-1). Therefore this impact is ***not significant*** No further mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

Construction of UII-NI and UII-NII under the 1989 VTM would include 151 dwelling units, which would contribute to ozone and particulate emissions. Additionally, construction emissions would contribute to the region's non-attainment status. Development under the 1989 VTM would result in greater development impacts than Alternative 1. An additional 80 housing units would be constructed under Alternative 2. These housing units would generate vehicular traffic and the production of secondary sources. Additionally, continuation of vegetation management and monitoring activities may generate minor, temporary emissions. However, implementation of mitigation measures in the 1982 EIR/EA would reduce this impact to ***not significant***. No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would include no construction activities. Therefore, there would be no construction-related change from existing levels of criteria pollutant emissions within the study area. Management activities may generate minor, temporary air emissions during use of electric or gas-powered motors (for mowing or weed trimming). However, this impact is ***not significant***. No mitigation is required.

## Expose Sensitive Receptors

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

Sensitive receptors to air pollutants typically include hospitals, nursing facilities, schools, and elderly care facilities. UII-NII would be located approximately 0.3 miles from a school. However, it is unlikely that the proposed project would expose any sensitive receptors to substantial pollutant concentrations. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain

(refer to Table 4-1). This impact is ***not significant***. No further mitigation is required.

#### Management and Monitoring of Conserved Habitat

Prescribed burning, including small-scale vegetation burns and pile burning, can significantly degrade localized air conditions. Additionally, air quality can be compromised from wildfires that have escaped from prescribed management burning. Smoke and particulates released from both planned and accidental fires have the potential to expose sensitive receptors adjacent to the Mountain. However, the Plan Operator would comply with BAAQMD regulations, including Regulation 5, which applies to open burning and addresses jurisdictional authority, timing of burns, and preparation of smoke management plans. Use of gas mowers, weed trimmers, chain saws, tractors, and other electric equipment for vegetation management may also result in minor emissions. However, minor emissions related to vegetation management would have negligent effects on adjacent residences and other sensitive receptors. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). Therefore this impact is ***not significant***. No further mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

Construction of UII-NI and UII-NII under the 1989 VTM would include 151 dwelling units. Although UII-NII would be located approximately 0.3 miles from a school, it is unlikely that the proposed project would expose any sensitive receptors to substantial pollutant concentrations. Development under the 1989 VTM would result in greater development impacts than Alternative 1. An additional 80 housing units would generate construction emissions. Additionally, continuation of vegetation management and monitoring activities may generate minor, temporary emissions. However, implementation of mitigation measures in the 1982 EIR/EA would reduce this impact to ***not significant***. No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would include no construction activities. Therefore, there would be no construction-related change from existing levels of criteria pollutant emissions within the study area. Management activities may generate minor, temporary air emissions during use of gas-powered motors (for mowing or weed trimming). However, this impact is ***not significant***. No mitigation is required.

## Effects on Geology, Seismicity, and Soils

The following analysis documents that potential impacts pertaining to geology, seismicity, and soils are not considered significant, because they would not result in any of the subsequent conditions.

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - Rupture of a known earthquake fault.
  - Strong seismic ground shaking.
  - Seismic-related ground failure, including liquefaction.
  - Landslides.
- Result in substantial soil erosion or the loss of topsoil.
- Be located on expansive soil, creating substantial risks to life or property.
- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State.

## Earthquake Fault

No active faults traverse the site. The controlling seismic source within the vicinity of the project site is the San Andreas Fault, located approximately four miles to the west. Therefore, no earthquake fault hazards are anticipated within the study area. There would be ***no impact*** under any alternative. No mitigation is necessary.

## Seismic Ground Shaking

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

Construction of UII-NII would include 71 dwelling units, which would expose new residents and structures to seismic hazards. However, new structures developed on the project site would be designed and constructed in accordance with the California State Building Code (Title 24) and local building codes, which require measures that reduce potential seismic ground-shaking impacts. The mitigation measures outlined in the 1983 EIR and 1989 Addendum would also still apply to the proposed project (refer to Table 4-1). Therefore this impact is ***not significant***. No further mitigation is required.

#### Management and Monitoring of Conserved Habitat

Botanists and field staff conducting vegetation management and monitoring activities may be exposed to seismic ground shaking if an earthquake were to occur in the region. However, because habitat management activities would not increase potential hazards related to seismic groundshaking, this impact is ***not significant***. No mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

Construction under the 1989 VTM would expose new residents and structures associated with 151 dwelling units to seismic ground shaking hazards.

Development under the 1989 VTM would result in greater development impacts than Alternative 1, including susceptibility to geologic hazards. Ongoing vegetation management activities would not affect seismic safety hazards. The mitigation measures outlined in the 1983 EIR and 1989 Addendum would still apply (refer to Table 4-1). This impact is ***not significant***. No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would include no construction activities. Consequently, there would be no change in seismic safety hazards associated with the site. Management activities – including hand work, herbicide application, and mowing – would continue as under the baseline condition. Therefore this impact is ***not significant***. No further mitigation is required.

## Seismic-Related Ground Failure, Including Liquefaction

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

ABAG liquefaction susceptibility maps indicate the project site has a very low susceptibility to liquefaction (ABAG 2006). Therefore, development of 71 dwelling units under the 2007 VTM would not likely result in ground failure hazards. This impact is ***not significant***. No further mitigation is required.

#### Management and Monitoring of Conserved Habitat

Regional mapping indicates that liquefaction potential in bedrock of San Bruno Mountain is considered to be low (ABAG 2006). Therefore, habitat management and monitoring activities under the 2007 HMP would not likely result in ground failure hazards. This impact is ***not significant***. No mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

ABAG liquefaction susceptibility maps indicate the project site has a very low susceptibility to liquefaction (ABAG 2006). Therefore, development of 151 dwelling units under the 1989 VTM would not likely result in ground failure hazards. Although development under the 1989 VTM would result in greater development impacts than Alternative 1, liquefaction hazards are negligible. Ongoing vegetation management activities would not affect seismic safety hazards. This impact is ***not significant***. No mitigation is required.

### Alternative 3—No Action

The No Action alternative would include no construction activities. Consequently, there would be no change in seismic safety hazards associated with the site. Management activities – including hand work, herbicide application, and mowing – would continue as under the baseline condition. Therefore this impact is ***not significant***. No mitigation is required.

# Landslide Hazards

## Alternative 1—Proposed Action

### Reconfiguration of the Northeast Ridge

Construction of 71 housing units under the proposed 2007 VTM is constrained by potential landslides (including debris flows) and very strong seismic ground shaking. Initiation of debris flows are possible from steep native slopes that are to remain above the eastern portion of proposed site development. The potential for rockfall may also exist from the faces of proposed steep cuts into bedrock materials. The 2007 VTM would include debris catchment walls to mitigate potential landslide hazards. Any weak, potentially unstable colluvial materials encountered during project grading would be removed. Additionally, 1.07 acres of infrastructure grading intended to protect the health, safety, and welfare of Northeast Ridge residents has stabilized steep slopes near Unit I. Final plans for surface drainage and subdrains would also be shown on final grading and drainage plans. In addition to implementation of local building codes and the mitigation measures in the 1983 EIR and 1989 Addendum (refer to Table 4-1), all detailed grading, drainage and project improvement plans would be submitted and reviewed by the City Engineer and City Geotechnical Consultant to confirm that final details of project mitigation design are satisfactorily completed. Therefore this impact is ***not significant***. No further mitigation is required.

### Management and Monitoring of Conserved Habitat

Ongoing management and monitoring activities could potentially initiate landsliding and debris flows through disturbance of topsoil during hand or mechanical clearing of brush invasions, grazing, prescribed or micro burns, and other techniques. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). Therefore this impact is ***not significant***. No further mitigation is required.

## Alternative 2—1989 Northeast Ridge Plan

Construction of 151 housing units under the 1989 VTM is constrained by potential landslides (including debris flows) and very strong seismic ground shaking. Development under the 1989 VTM would result in greater development impacts than Alternative 1, including susceptibility to landslide hazards. Construction of an additional 80 housing units would result in more extensive geology and soils impacts. Ongoing vegetation management activities under the current program would not affect landslides hazards. Implementation of the mitigation measures in the 1983 EIR and 1989 Addendum (refer to Table 4-1) would reduce this impact to ***not significant.*** No further mitigation is required.

## Alternative 3—No Action

The No Action alternative would include no construction activities. Landslide hazards would remain unchanged because no grading or fill activity would take place, no additional load would be imposed on the slopes, and no change in watering or stormwater management practices would occur. Management

activities – including hand work, herbicide application, and mowing – would continue as under the baseline condition. Therefore this impact is ***not significant***. No further mitigation is required.

# Substantial Soil Erosion

## Alternative 1—Proposed Action

### Reconfiguration of the Northeast Ridge

Housing construction under the proposed 2007 VTM would result in the grading and conversion of 19.64 acres of undeveloped land in UII-NII. Additionally, 1.07 acres of infrastructure grading intended to protect the health, safety, and welfare of Northeast Ridge residents has stabilized steep slopes near Unit I. Site grading and geotechnical control may result in temporary soil erosion or topsoil loss. However, the proposed changes from the 1989 VTM would reduce the potential for soil erosion or topsoil loss as the total development area under the proposed project would decrease by approximately 8.93 acres. Additionally, the mitigation measures included in the 1983 EIR and 1989 Addendum would still apply (refer to Table 4-1). Therefore this impact is ***not significant***. No further mitigation is required.

### Management and Monitoring of Conserved Habitat

Ongoing management and monitoring activities could potentially cause temporary soil erosion through disturbance of topsoil during vegetation management, such as hand or mechanical removal of brush invasions, prescribed or micro burns, grazing, and other techniques. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). Therefore this impact is ***not significant***. No further mitigation is required.

## Alternative 2—1989 Northeast Ridge Plan

Construction of the 1989 VTM would result in the grading and conversion of 40.00 acres of undeveloped land. Significant site grading activities may result in soil erosion or topsoil loss. Development under the 1989 VTM would result in greater development impacts than Alternative 1, including susceptibility to soil erosion. An additional 80 housing units, or 8.93 acres of developed lands, would be graded under Alternative 2. Ongoing vegetation management activities under the current program would not initiate substantial soil erosion. Implementation of the mitigation measures in the 1983 EIR and 1989 Addendum (refer to Table 4-1) would reduce this impact to ***not significant.*** No further mitigation is required.

## Alternative 3—No Action

The No Action alternative would include no construction activities. Soil erosion hazards would remain unchanged because no grading or fill activity would take place, no additional load would be imposed on the slopes, and no change in watering or stormwater management practices would occur. Management activities – including hand work, herbicide application, and mowing – would

continue as under the baseline condition. Therefore this impact is ***not significant***. No further mitigation is required.

# Expansive Soil

## Alternative 1—Proposed Action

### Reconfiguration of the Northeast Ridge

Expansive soils, usually clay soils that have the ability to change in volume when the water content of the soil changes, are not known to be found at the project site. However, if expansive soils are found during preliminary grading activities for the 71 housing units, the potential impact can be mitigated through compliance with the California State Building Code (Title 24), and implementation of the mitigation measures outlined in the 1983 EIR and the 1989 Addendum (refer to Table 4-1). This impact is ***not significant***. No further mitigation is required.

### Management and Monitoring of Conserved Habitat

Expansive soils are not known to be found on the Mountain. Habitat management and monitoring activities would not affect soils associated with the site. There would be ***no impact***. No mitigation is required.

## Alternative 2—1989 Northeast Ridge Plan

Expansive soils are not known to be found on the Mountain. However, if expansive soils are found during preliminary grading activities for the 151 housing units, the potential impact can be mitigated through compliance with the California State Building Code (Title 24), and implementation of the mitigation measures outlined in the 1983 EIR and the 1989 Addendum (refer to Table 4-1). This impact is ***not significant***. No further mitigation is required.

## Alternative 3—No Action

The No Action alternative would include no construction activities. Consequently, there would be no change in soils associated with the site. There would be ***no impact***. No mitigation is required.

# Known Mineral Resources

There are no known mineral resources of value to the region and the State on the Mountain. Implementation of the proposed Alternatives would not result in the loss of availability of a known mineral resource. There would be ***no impact*** under any alternative. No mitigation is necessary.

# Effects on Hydrology and Water Quality

The following analysis documents that potential impacts pertaining to hydrology and water quality are not considered significant, because they would not result in any of the subsequent conditions.

- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge.
- Substantially alter the existing drainage pattern of the site or area in a manner which would result in substantial erosion or siltation on- or off-site.
- Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
- Otherwise substantially degrade water quality.
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows.

## Substantially Deplete Groundwater Supplies

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

The 71 housing units constructed under the proposed 2007 VTM would obtain its water supply from SFPUC via the City of Brisbane. The proposed project would not rely on groundwater, and would therefore not deplete groundwater supplies. Although the 1989 Addendum states that the project may result in minor changes to the direction or rate of flow of groundwater in the development areas, studies conducted before the preparation of the 1989 Addendum did not identify any adverse hydrological consequences. Recommended mitigation measures in the 1983 EIR and 1989 Addendum would still apply to the proposed project (refer to Table 4-1). Therefore this impact is ***not significant***. No further mitigation is required.

#### Management and Monitoring of Conserved Habitat

Ongoing management and monitoring activities on the Mountain would not affect groundwater supplies. There would be ***no impact***.

### Alternative 2—1989 Northeast Ridge Plan

The 151 housing units constructed under the 1989 VTM would obtain its water supply from SFPUC via the City of Brisbane. The proposed project would not rely on groundwater. Although development under the 1989 VTM would result in greater development impacts than Alternative 1, groundwater levels are unlikely to be affected. Nor would ongoing vegetation management activities under the current program deplete groundwater supplies. Implementation of mitigation measures in the 1983 EIR and 1989 Addendum (refer to Table 4-1) would reduce this impact to ***not significant***. No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would not affect groundwater supplies. There would be no change in site drainage, area of impermeable surface, or other features or processes that contribute to groundwater recharge. Management activities – including hand work, herbicide application, and mowing – would continue as under the baseline condition. There would be ***no impact***. No mitigation is required.

## Substantial Erosion or Siltation

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

Grading and construction of housing on 19.64 acres of undeveloped land in UII-NII and infrastructure grading on 1.07 acres in Unit I would result in increased surface runoff and associated erosion or siltation. Runoff from the project flows into the Brisbane Lagoon, which in the past has experienced problems with siltation. Additionally, project-related runoff into the Crocker Industrial Park would increase surface flows in the streets, which may compound silt generation during 10-year storm conditions. Surface runoff from the proposed project would be less than that from 1989 VTM due to a reduced development footprint. The mitigation measures outlined in the 1983 EIR and 1989 Addendum, which include sediment traps and catchment basins to collect sediment runoff, would apply (refer to Table 4-1). Therefore this impact is ***not significant***. No further mitigation is required.

#### Management and Monitoring of Conserved Habitat

Ongoing management and monitoring activities could potentially cause temporary soil erosion through disturbance of topsoil during vegetation management activities. Soil disturbance and subsequent erosion or siltation may occur following hand or mechanical clearing, prescribed or micro burns, and minor trampling from livestock grazing. However, changes are expected to be minor. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). This impact is ***not significant***. No further mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

Grading of 40.00 acres of undeveloped land for construction of residential development would result in increased surface runoff and associated erosion or siltation. Development under the 1989 VTM would result in greater development impacts than Alternative 1, including changes in the rate and volume of surface runoff. An additional 80 housing units, or 8.93 acres of developed lands, would be constructed under Alternative 2. Ongoing vegetation management activities under the current program would not initiate substantial soil erosion. Implementation of the mitigation measures outlined in the 1983 EIR and 1989

Addendum (refer to Table 4-1) would reduce this impact to ***not significant***. No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would not generate substantial soil erosion. There would be no change in site drainage, slope conditions, or other features or processes that control the quality and quantity of surface water runoff. Management activities – including hand work, herbicide application, and mowing – would continue as under the baseline condition. Therefore this impact is ***not significant***. No further mitigation is required.

## Rate or Amount of Surface Runoff

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

Grading and construction of housing on 19.64 acres of undeveloped land in UII-NII and infrastructure grading on 1.07 acres in Unit I could result in increased surface runoff and associated erosion or siltation. Runoff from the project site flows into the Brisbane Lagoon, which in the past has experienced problems with flooding. Additionally, project-related runoff into the Crocker Industrial Park would increase surface flows in the streets and may compound flooding conditions during 10-year storm conditions. As with the 1989 VTM, the proposed project would involve substantial grading which would alter the existing on-site drainage pattern. However, surface runoff under the proposed project would be less than that of the 1989 VTM due to a reduced development footprint. The mitigation measures outlined in the 1983 EIR and 1989 Addendum would apply (refer to Table 4-1). Therefore this impact is ***not significant***. No further mitigation is required.

#### Management and Monitoring of Conserved Habitat

Ongoing management and monitoring could temporarily increase the rate and/or amount of surface runoff if vegetation removal exposes topsoil and alters infiltration rates. Soil disturbance and associated surface runoff may occur following hand or mechanical clearing, prescribed or micro burns, and minor trampling from livestock grazing. However, changes are expected to be minor. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). This impact is ***not significant***. No further mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

Grading of 40.00 acres of undeveloped land for construction of residential development would result in increased surface runoff and potential for flooding. Development under the 1989 VTM would result in greater development impacts than Alternative 1, including changes in the rate and volume of surface runoff. An additional 80 housing units, or 8.93 acres of developed lands, would be

constructed under Alternative 2. Ongoing vegetation management activities under the current program would not increase the rate or amount of runoff above baseline conditions. Implementation of the mitigation measures outlined in the 1983 EIR and 1989 Addendum (refer to Table 4-1) would reduce this impact to ***not significant***. No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would not increase the rate or amount of surface runoff. There would be no change in site drainage, slope conditions, or other features or processes that control the quality and quantity of surface water runoff. Management activities – including hand work, herbicide application, and mowing – would continue as under the baseline condition. Therefore this impact is ***not significant***. No further mitigation is required.

## Degrade Water Quality

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

Water quality may be impacted during and after the development phase for the 2007 VTM. During grading and construction of 71 dwelling units in UII-NII and infrastructure grading on 1.07 acres in Unit I, sedimentation may increase due to disturbance of the soils and subsequent erosion. Additionally, construction-related releases of hazardous materials and discharge of household hazardous materials after occupation are all risks to surface water quality. Despite these potential risks, the proposed project would disturb less area than was proposed in the 1989 VTM. Additionally, the proposed changes would not increase the potential for violating any water quality standards or waste discharge requirements. Implementation of pesticide restrictions under the terms of the San Bruno Mountain HCP and the mitigation measures identified in the 1983 EIR and 1989 Addendum (refer to Table 4-1) would reduce the levels of sediment and/or pollutants entering surface water. Therefore this impact is ***not significant***. No further mitigation is required.

#### Management and Monitoring of Conserved Habitat

As stated above, management and monitoring activities could potentially cause temporary soil erosion through disturbance of topsoil during vegetation management. There would be a risk of sediment transport following hand work, prescribed or pile burning, grazing, and mechanical clearing. Additionally, there would be a risk of fuel and/or oil release during vegetation management using weed trimmers or chain saws, gas mowers, and/or heavy machinery. Ongoing management and monitoring activities also have the potential to release herbicides, pesticides, and fungicides into intermittent stream courses on the Mountain. However, the Plan Operator would take precautions to ensure that accidental release or spills do not occur. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). This impact is ***not significant***. No further mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

Construction under the 1989 VTM would include 151 dwelling units, which could result in water quality degradation from soil erosion, accidental leaks and spills, and discharge of household hazardous waste. Development under the 1989 VTM would result in greater development impacts than Alternative 1. An additional 80 housing units would result in more extensive surface runoff and potential for water quality degradation. Ongoing vegetation management activities under the current program would not degrade water quality beyond baseline conditions. Implementation of the mitigation measures outlined in the 1983 EIR and 1989 Addendum (refer to Table 4-1) would reduce this impact to ***not significant***. No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would not degrade water quality. There would be no change in land use, site drainage, or other features or processes that control the quality and quantity of surface water runoff. Management activities – including hand work, herbicide application, and mowing – would continue as under the baseline condition. Therefore this impact is ***not significant***. No further mitigation is required.

## 100-Year Flood Hazard Area

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

The only FEMA flood zone located within the Mountain's HCP boundaries is located the Crocker Industrial Park. Construction under the 2007 VTM would include 71 dwelling units in the UII-NII area. During and after construction, project-related runoff into the Crocker Industrial Park would increase surface flows in the streets and may compound flooding conditions during 10-year storm conditions. The hydrological conditions at the site have not substantially changed since the 1983 EIR and the 1989 Addendum. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). Therefore this impact is ***not significant***. No further mitigation is required.

#### Management and Monitoring of Conserved Habitat

Ongoing management and monitoring could temporarily increase the rate and/or amount of surface runoff if vegetation removal exposes topsoil and reduces infiltration rates. Soil disturbance and associated surface runoff may occur following hand or mechanical clearing, prescribed or micro burns, and minor trampling from livestock grazing. However, changes are expected to be minor. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). This impact is ***not significant***. No further mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

Construction under the 1989 VTM would include 151 dwelling units. During and after construction, surface water volumes may increase downstream flooding impacts in the Crocker Industrial Park. Development under the 1989 VTM would result in greater development impacts and more extensive surface runoff than Alternative 1. Ongoing vegetation management activities under the current program would not result in 100-year flood hazards. Implementation of the mitigation measures outlined in the 1983 EIR and 1989 Addendum (refer to Table 4-1) would reduce this impact to ***not significant***. No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would not result in 100-year flood hazards. There would be no change in land use, site drainage, or other features or processes that control the quality and quantity of surface water runoff. Management activities – including hand work, herbicide application, and mowing – would continue as under the baseline condition. Therefore this impact is ***not significant***. No further mitigation is required.

## Effects on Hazardous Materials

The following analysis documents that potential impacts pertaining to hazardous materials are not considered significant, because they would not result in any of the subsequent conditions.

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

## Transport, Use, or Disposal of Hazardous Materials

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

Under the 2007 VTM, grading and construction of 71 dwelling units would occur in UII-NNI; thus, hazardous materials associated with business and industry are not anticipated to be used during the operational period of the project. Additionally, infrastructure grading has occurred on 1.07 acres in Unit I. Grading and construction activities would involve the transport, use, and disposal of chemical agents, solvents, paints, and other hazardous materials that are commonly associated with construction activities. Discharge of household hazardous materials after occupation may also occur. The amount of these

chemicals present during construction would be limited and would be in compliance with existing government regulations. Implementation of the proposed project is unlikely to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Therefore this impact is ***not significant***. No further mitigation is required.

### Management and Monitoring of Conserved Habitat

Ongoing management and monitoring activities have the potential to transport and use hazardous materials on the Mountain. There would be a risk of fuel and/or oil release during vegetation management using weed trimmers or chain saws, gas mowers, and/or heavy machinery. There could also be potential release of herbicides, pesticides, and fungicides into intermittent stream courses on the Mountain. The use of pesticides and herbicides could threaten the three listed butterflies if their use occurs in proximity to occupied habitat. Butterfly larvae in the genus *Speyeria* are extremely sensitive to pesticides, and even the accumulation of runoff in the soil after spraying has proven lethal to these larvae (USFWS 2006). However, the Plan Operator would take precautions to ensure than no accidental releases occur during implementation of management techniques. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). Therefore this impact is ***not significant***. No further mitigation is required.

## Alternative 2—1989 Northeast Ridge Plan

The land uses proposed under the 1989 VTM include 151 housing units. Construction-related transport, use, and release of hazardous materials and discharge of household hazardous materials after occupation may occur. Development under the 1989 VTM would result in greater development impacts than Alternative 1, including potential for accidental release of hazardous materials. Ongoing vegetation management activities would continue to routine use, transport, and disposal of hazardous materials as under the baseline condition. Implementation of the 1982 EA/EIR mitigation measures (refer to Table 4-1) would reduce this impact to ***not significant***. No further mitigation is required.

## Alternative 3—No Action

Risk of exposure to hazardous materials and toxic materials is presently considered minimal, and would remain unchanged under the No Action Alternative. Management activities – including hand work, herbicide application, and mowing – would continue as under the baseline condition. Therefore this impact is ***not significant***. No further mitigation is required.

# Emit Hazardous Emissions or Handle Hazardous Materials

## Alternative 1—Proposed Action

### Reconfiguration of the Northeast Ridge

The proposed project consists of the grading and construction of 71 dwelling units in UII-NII. Additionally, infrastructure grading has occurred on 1.07 acres in Unit I. As discussed above, construction activities may result in hazardous emissions or handling of hazardous materials. Occupation of the residential subdivision may also result in hazardous emissions or household hazardous waste. However, the project site is not located within 0.25-mile of an existing or proposed school, and would therefore not expose sensitive receptors to hazardous emissions. This impact is ***not significant***. No mitigation is required.

### Management and Monitoring of Conserved Habitat

Ongoing management and monitoring activities have the potential to release hazardous materials on the Mountain. There would be a risk of fuel and/or oil release during vegetation management using weed trimmers or chain saws, gas mowers, and/or heavy machinery. There could also be potential release of herbicides, pesticides, and fungicides into intermittent stream courses on the Mountain. The use of pesticides and herbicides could also threaten the three listed butterflies if their use occurs in proximity to occupied habitat. Butterfly larvae in the genus *Speyeria* are extremely sensitive to pesticides, and even the accumulation of runoff in the soil after spraying has proven lethal to these larvae (USFWS 2006). However, to minimize potential effects on the butterflies, no spraying would take place near known habitat, pre-activity surveys would be conducted, and spraying would be limited to winds less than 10 miles per hour. Additionally, no spraying or hazardous emissions would occur within 0.25-mile of an existing or proposed school, and would therefore not expose human sensitive receptors to hazardous materials. This impact is ***not significant***. No further mitigation is required.

## Alternative 2—1989 Northeast Ridge Plan

The 1989 VTM includes construction of 151 housing units. Transport, use, and disposal of hazardous materials is expected during construction phases. Occupation of the residential subdivision may also result in hazardous emissions or household hazardous waste. Development under the 1989 VTM would result in greater development impacts than Alternative 1, including potential exposure to hazardous materials. However, the project site is not located within 0.25-mile of an existing or proposed school, and would therefore not expose sensitive receptors to hazardous emissions. Ongoing vegetation management activities would continue to routine use, transport, and disposal of hazardous materials as under the baseline condition. This impact is ***not significant***. No mitigation is required.

### Alternative 3—No Action

Risk of exposure to hazardous materials and toxic materials is presently considered minimal, and would remain unchanged under the No Action Alternative. Management activities – including hand work, herbicide application, and mowing – would continue as under the baseline condition. Therefore this impact is ***not significant***. No further mitigation is required.

# 4.3 Effects on the Biological Environment

## Methodology and Significance Criteria

The Proposed Action, if a decision is made to issue an amended ITP, would provide the local Permittees with take coverage for the callippe silverspot and bay checkerspot, in addition to the take coverage already provided for other listed species by the existing HCP. This impact analysis assumes that biological resources could be affected directly or indirectly by activities associated with proposed residential development, infrastructure installation, habitat management, and monitoring. Many of the management strategies would improve habitat conditions for the callippe silverspot and bay checkerspot host plants, and would result in net beneficial effects on the butterflies. However, the following types of activities associated with management strategies may result in temporary disturbance to biological resources:

- Disturbance to biological resources from conversion of habitat associated with restoration, enhancement, or creation activities.
- Removal of vegetation as part of management by controlled burns, grazing activities, or herbicide application.
- Disturbance to biological resources from increased human presence as part of surveys, management, or monitoring.

The following analysis documents that potential impacts pertaining to biological resources are not considered significant, because they would not result in any of the subsequent conditions:

- A substantial unmitigated adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species.
- A substantial adverse effect on any riparian habitat, wetland, or other sensitive natural community.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species.
- Impair the survival of sensitive species through habitat fragmentation.

- Substantially increase human activity in an area such that sensitive species avoid nesting, feeding, or reproduction activities.
- Increase the potential for invasion by non-native species.

# Effects on Vegetation Communities

## Loss of Annual Grassland Habitat

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

Development of UII-NII would permanently disturb 16.67 acres of land for the construction of homes, roadways, infrastructure, and landscaped areas. An additional 2.97 acres would be disturbed temporarily for remedial grading, but would be restored and dedicated as Conserved Habitat. Of the 16.67 acres of permanent disturbance, 12.01 acres are grassland habitat (10.94 acres disturbed for construction of UII-NII and 1.07 acres already disturbed for the infrastructure grading). As shown in Table 4-3, this represents a total loss of 9.7% of grassland on the Northeast Ridge and less than 1% of grassland on the Mountain. However, the 2007 VTM results in a net increase of 17.30 acres of grassland over the 1989 VTM due to the dedication of Conserved Habitat in the entire UII-NI area. The 2007 VTM represents a decrease in the total area of development and an overall decrease in loss of grassland habitat. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain. Therefore this impact is ***not significant***. No further mitigation is required.

**Table 4-3.** Comparison of Grassland Disturbance in 1989 and 2007 VTMs

| | Grassland Acreage Disturbed | % Loss of Grassland Habitat[1] | |
|---|---|---|---|
| | | Northeast Ridge[2] | San Bruno Mountain[3] |
| **1989 VTM[4]** | | | |
| UII-NI | 20.12 | 16.2% | 1.6% |
| UII-NII | 8.12 | 6.6% | 0.6% |
| 2007 Infrastructure Grading | 1.07 | 0.9% | 0.1% |
| 1989 Total | 29.31 | 23.7% | 2.3% |
| **2007 VTM[4]** | | | |
| UII-NI | 0.00 | 0% | 0% |
| UII-NII | 10.94 | 8.8% | 0.9% |
| 2007 Infrastructure Grading | 1.07 | 0.9% | 0.1% |
| 2007 Total | 12.01 | 9.7% | 0.9% |
| Difference (1989-2007) | -17.30 | -14.0% | -1.3% |

Notes:

1 The baseline condition for grassland impacts includes the 1.07 acres that were disturbed by the 2007 infrastructure grading (previously undisturbed portions only).

2 Total of 123.87 acres of grassland on Northeast Ridge used in calculation.

3 Total of 1287 acres of grassland on San Bruno Mountain used in calculation.

4 Because the 2007 infrastructure grading (previously undisturbed portions only) would occur under both the 1989 VTM or 2007 VTM approvals, grassland impacts have been included in both totals.

### Management and Monitoring of Conserved Habitat

Native grasslands would be enhanced within the Conserved Habitat, in accordance with the 2007 HMP, by using hand work, herbicide application, livestock grazing, prescribed or micro burning, mowing, mechanical clearing, and/or restoration techniques to enhance cover of native forbs and perennial grasses. Annual grasslands are common on the Mountain, representing 90% of the land area, and are degraded and dominated by non-native invasive species. Although minor temporary disturbance may occur during implementation of the management techniques, the increased vegetation management made possible through the endowment fund from Brookfield Northeast Ridge II LLC would protect and enhance annual grasslands habitat over time. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). Establishment of the endowment fund ensures this impact is ***not significant*** and ***net beneficial***. No further mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

As shown in Table 4-3, a total of 29.31 acres of grasslands habitat would be lost under the 1989 development authorizations (including the 1.07 acres that were already disturbed for the infrastructure grading). This constitutes a loss of 23.7% of grassland on the Northeast Ridge and 2.3% of grassland on the Mountain. Development under the 1989 VTM would result in greater direct development impacts than Alternative 1, namely in the UII-NI area. Alternative 2 would also include indirect impacts associated with continuation of existing habitat management and monitoring efforts. Increased funding would not be available for habitat management, so gradual invasion of coastal scrub species would continue across the Mountain. Enhanced management of invasive brush species is necessary to fully manage grassland conversion. Therefore, implementation of Alternative 2 would result in a ***significant and unmitigated*** impact.

### Alternative 3—No Action

The No Action alternative would include continuation of vegetation management and monitoring under the adopted HCP. However, continuation of the existing annual funding and management program would result in progressive invasion by non-native species and conversion of grasslands to brush and thatch habitat. The 2007 HMP reports that approximately 5.3 acres of grassland are converting to coastal scrub per year, and it is anticipated that this process will continue unless the management program is modified. Enhanced management of invasive brush species is necessary to fully manage grassland conversion. Implementation of Alternative 3 would result in a ***significant and unmitigated*** impact.

## Spread of Non-Native Species

Non-native grasses and forbs that have invaded California grasslands are a serious threat due to their ability to become more abundant at the expense of the listed butterflies' larval foodplants. European annual grasses and forbs have displaced native forbs in native California grasslands, and in turn, have contributed to the decline of the callippe silverspot and mission blue butterflies (USFWS 2006).

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

A major threat to the butterflies on San Bruno Mountain is the invasion of their annual grassland habitat by non-native plant species. These species out-compete native host plants and thereby eliminate butterfly habitat. Soil disturbance, such as that associated with the proposed 71 housing units in UII-NII and infrastructure grading in Unit I, facilitates the invasion of areas by non-native species. Non-natives that are already present in the area may have a competitive advantage over native plants in dominating a temporarily disturbed area. In addition, increased human activity introduces new non-native species to an area from foot traffic or domestic pets, and plants that "escape" from residential areas.

For example, Bermuda buttercup (*Oxalis pescaprae*) is a threat to viola because it forms a dense carpet of rhizomes and out-competes all existing vegetation. The 2007 VTM represents a decrease in the total area of development from the 1989 VTM, and associated potential spread of non-native species. Additionally, the supplementary funding provided by Brookfield Northeast Ridge II LLC would enhance vegetation management and combat the spread of invasive species on the Mountain (see discussion below). Establishment of the endowment fund reduces this impact to ***not significant***. No further mitigation is required.

### Management and Monitoring of Conserved Habitat

Vegetation management across the Mountain is specifically intended to control non-native species and allow for establishment, re-establishment, or expansion of native plant species. Native annual grasslands would be enhanced within the Conserved Habitat, in accordance with the 2007 HMP, by using hand work, herbicide application, livestock grazing, prescribed or micro burning, mowing, mechanical clearing, and/or restoration techniques to control invasive species. Although there is a risk of accidental spread of non-target invasive species during vegetation management activities, the increased management made possible through the endowment fund from Brookfield Northeast Ridge II LLC would protect and enhance annual grasslands habitat over time. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). Establishment of the endowment fund ensures this impact is ***not significant*** and ***net beneficial***. No further mitigation is required.

## Alternative 2—1989 Northeast Ridge Plan

Development under the 1989 VTM would result in construction of 151 housing units, which allow for introduction of non-native species during land disturbance as described above. Temporary disturbance of an additional 11.43 acres can encourage the establishment of invasive species if not carefully managed. Development under the 1989 VTM would result in greater development impacts than Alternative 1. Increased funding would not be available for habitat management and monitoring under Alternative 2, so the current management program and gradual invasion of coastal scrub species would continue across the Mountain. Although implementation of the 1982 EA/EIR mitigation measures (refer to Table 4-1) would reduce this impact, continuation of existing management efforts would result in the loss of annual grasslands over time. Enhanced management of invasive brush species is necessary to fully manage grassland conversion. Implementation of Alternative 2 would result in a ***significant and unmitigated*** impact.

## Alternative 3—No Action

The No Action alternative would include continuation of vegetation management and monitoring under the adopted HCP. However, continuation of the existing annual funding and management program would result in progressive invasion by non-native species and conversion of grasslands to brush and thatch habitat. The 2007 HMP reports that approximately 5.3 acres of grassland are converting to coastal scrub per year, and it is anticipated that this process will continue unless the management program is modified. Enhanced management of invasive brush

species is necessary to fully manage grassland conversion. Implementation of Alternative 3 would result in a ***significant and unmitigated*** impact.

# Special Status Plants

Special status plants with potential to occur on the Mountain include a variety of manzanita, thistle, wallflower, lessingia, lily, lupine, bush mallow, popcorn flower, and owl's clover species (refer to Table 3-2).

## Alternative 1—Proposed Action

### Reconfiguration of the Northeast Ridge

Grading and construction of the 2007 VTM would include 19.64 acres of undeveloped land in UII-NII (16.67 acres of permanent disturbance and 2.97 acres of revegetated land). Additionally, infrastructure grading has occurred on 1.07 acres in Unit I. Construction activities – including site grading and preparation, construction of geotechnical controls, and installation of public utilities – could potentially disturb a variety of special status plant species. Although no special status plant species listed in Table 3-2 have been documented within the development area of the Northeast Ridge, potentially undiscovered populations could be impacted. Potential disturbance of special status plants is significantly lesser under the 2007 VTM, compared to the 1989 development authorizations. Implementation of the 1982 EA/EIR mitigation measures (refer to Table 4-1) would reduce this impact to ***not significant***. No further mitigation is required.

### Management and Monitoring of Conserved Habitat

Native annual grasslands would be enhanced within the Conserved Habitat, in accordance with the 2007 HMP, by using hand work, herbicide application, livestock grazing, prescribed or micro burning, mowing, mechanical clearing, and/or restoration techniques to enhance cover of native forbs, perennial grasses, and special status plants. Although minor temporary disturbance to special status plants may occur during implementation of the management techniques, the increased vegetation management made possible through the endowment fund from Brookfield Northeast Ridge II LLC would protect and enhance annual grasslands habitat over time. Management efforts emphasize protection and expansion of special status species populations that service as host or nectar plants for the listed butterflies. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). Establishment of the endowment fund ensures this impact is ***not significant*** and ***net beneficial***. No further mitigation is required.

## Alternative 2—1989 Northeast Ridge Plan

Construction of the 2007 VTM would include 40.00 acres of undeveloped land (25.60 acres of permanent disturbance and 14.40 acres of revegetated land). Construction activities could potentially disturb a variety of special status plant species. Development under the 1989 VTM would result in greater development

impacts than Alternative 1, including loss of special status plants within the UII-NI development area. Increased funding would not be available for habitat management and monitoring under Alternative 2, so the current management program and progressive invasion of coastal scrub species would continue across the Mountain. Although implementation of the 1982 EA/EIR mitigation measures (refer to Table 4-1) would reduce this impact, continuation of existing management efforts would result in the loss of special status plants over time. Implementation of Alternative 2 would result in a ***significant and unmitigated*** impact.

### Alternative 3—No Action

The No Action alternative would include continuation of vegetation management and monitoring under the adopted HCP. However, continuation of the existing annual funding and management program would result in progressive invasion by woody species and potential loss of native special status plants. The 2007 HMP reports that approximately 5.3 acres of grassland are converting to coastal scrub per year, and it is anticipated that this process will continue unless the management program is modified. Enhanced management of invasive brush species is necessary to fully mitigate impacts to special status plant species. Implementation of Alternative 3 would result in a ***significant and unmitigated*** impact.

# Effects on Callippe Silverspot Butterfly

The callippe silverspot potentially occurs in areas where the butterfly's host plant is located, where adult nectar plants are present, and on ridges and hilltops where courtship and mating take place. The viola is host plant for the callippe silverspot (refer to Figures 3-4 and 3-5). As such, the following analysis uses viola habitat as a surrogate for potential callippe silverspot occurrence.

## Loss of Viola Habitat

Viola was mapped on San Bruno Mountain in 2000 by hand using aerial-ortho photos as field maps, and in 2004 and 2005 using Trimble Explorer 3 handheld GPS units. Detailed viola mapping was conducted on the Northeast Ridge during that time (refer to Figures 3-4 and 3-5). Viola plant counts and habitat acreage for the Northeast Ridge were averaged to evaluate impacts of the 1989 and 2007 VTMs. On average, there are approximately 133.5 acres of viola habitat throughout the Mountain, of which 24.8 acres are on the Northeast Ridge.

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

As shown in Table 4-4, the proposed 2007 VTM would result in the loss of approximately 2,514 viola plants or 3.1 acres of viola habitat (including the loss of 0.8 acres of viola habitat which occurred during the recent infrastructure

grading). It is important to note that there is a wide annual shift in viola habitat available for the callippe silverspot. The estimated acreages reported in Table 4-4 are the average of three years of viola data. Depending on annual fluctuations, the estimated viola habitat impacted by reconfiguration of the Northeast Ridge would range from 3.0 to 4.4 acres. Construction of the proposed 2007 VTM represents a loss of 12.3% of the viola habitat on the Northeast Ridge (averaged, range is between 12% and 17.8%) and 2.3%of the viola habitat on the Mountain (averaged, range is between 2.2% and 3.3%). Consequently, the projected loss of viola habitat as a result of the 2007 VTM is within normal variability from year to year.

Compared to the 1989 VTM, the proposed reconfiguration represents a decrease in the total area of development and an overall decrease in loss of viola habitat. The 1989 VTM has 8.6 acres of high and low value viola habitat being disturbed, while the 2007 VTM has 3.1 acres of low value viola habitat being disturbed. Destruction of host plant habitat would result in a decrease in the amount of habitat available for callippe silverspot reproduction. Callippe silverspot individuals also become disoriented as a result of the loss of their habitat and fail to find a mate and/or reproduce. However, impacts to the callippe silverspot under the proposed 2007 VTM have been mitigated to ***not significant*** through Brookfield Northeast Ridge II LLC's commitment to preserve high value hilltopping habitat at Callippe Hill and dedicate endowment funding for increased management of invasive plant species and enhancement of butterfly habitat (see discussion below). Enhanced vegetation management, along with implementation of new Mitigation Measure 1 (below), will adequately mitigate for the direct loss of 3.1 acres of viola habitat.

**Table 4-4.** Comparison of Viola Habitat Impacted by 1989 and 2007 VTMs

| | **1989 Development Plan** | **2007 Development Proposal** | **Difference between 1989 and 2007 Plans** |
|---|---|---|---|
| Estimated Number of viola plants impacted | 5,830 | 2,514 | -3,316 |
| Estimated Acres of viola habitat impacted | 8.6 | 3.1 | -6 |
| Percentage of viola habitat impacted on Northeast Ridge | 34.7% | 12.3% | -22.4% |
| Percentage of viola habitat impacted on the Mountain | 6.4% | 2.3% | -4.2% |

Note: The acreages above are the average of three years of viola data. There is a wide annual shift in viola habitat available for the callippe silverspot.

### Management and Monitoring of Conserved Habitat

Vegetation management activities described in the 2007 HMP are intended to reduce or eliminate invasive plant infestations, reduce thatch and dense annual

grasses, and reduce the cover of coastal scrub. The techniques include hand removal, herbicide application, prescribed and pile burning (when permissible), livestock grazing, mowing, mechanical clearing, and replanting and restoration. Over the past twenty-five years, the primary methods for invasive species control on the Mountain have been herbicide treatment and hand removal. Mowing, grazing, and burning have been used to a lesser extent and mostly on an experimental basis, but their usage would increase with the expanded funding generated by the Proposed Action. Due to the Plan Operator's ability to target specific invasive species using the herbicide, mowing and hand control techniques, there have been no significant effects to the endangered butterflies (mission blue, callippe silverspot, and San Bruno elfin) on the Mountain from this ongoing work. It is more difficult to target only invasive species when applying grazing and prescribed burning techniques. Though the overall impact of grazing and/or prescribed burning has been demonstrated to have a significant positive effect on the butterflies' habitat when applied appropriately, the use of grazing and prescribed burning could result in minor harm or take of individual endangered butterflies.

Though management of invasive species and enhancement of preferred habitat for the Species of Concern may result in incidental take of individuals, the collective improvement and protection of habitat that will result from the proposed HCP amendment is substantial. The following discussion includes how each vegetation management technique could harm viola habitat and what measures are or can be used to avoid harm.

- **Hand Work.** Use of a weed wrench, ax maddox, or chain saw to remove invasive species could potentially disturb, trample, or uproot nearby individual viola plants. Surveys and avoidance measures, described under new Mitigation Measure 1 (below), would be employed.
- **Herbicide Application.** Use of herbicides on mature, dense stands of invasives could potentially result in accidental drift onto nearby viola plants. By law, herbicide spraying is restricted to periods with low winds to avoid drift to non-target species. A backpack sprayer is used in areas with sensitive species rather than the truck mounted spray rig to better target the invasive species. Surveys and avoidance measures, described under new Mitigation Measure 1 (below), would be employed.
- **Livestock Grazing.** Grazing impacts include minor trampling of host plants and incidental predation from livestock. The Plan Operator shall implement a grazing program on a small scale and at low intensities to determine the overall benefit of the grazing on the endangered butterflies. Areas selected for grazing should be degraded by invasive species and/or heavy thatch such that host plants are already scarce and the benefits of grazing are high.
- **Prescribed Burning.** Spring burning too close to the time of adult butterfly emergence could delay flowering of host plants and result in the absence of blossoms and seeds when needed. If burning to maintain the open grasslands is conducted outside the fire season, it for could be detrimental to the mission blue and callippe silverspot, their host plants, and may even harm unprotected eggs or larvae. Timing considerations are very important for

burn management to avoid impacts on the butterflies. Prescribed burning would require assistance from CDF and/or the local fire departments and would require a permit from the BAAQMD. Prior to conducting any burns, a burn plan must be prepared and approved by CDF.

- **Pile Burning.** As with prescribed burning, pile burning could interfere with flowering of butterfly host plants. Timing considerations are very important for burn management to avoid impacts on the butterflies. Pile burning would require assistance from CDF and/or the local fire departments and would require a permit from the BAAQMD. Prior to conducting any pile burns, a burn plan must be prepared and approved by CDF.
- **Mowing.** Non-selective mowing to maintain open grasslands for the mission blue and callippe silverspot could be detrimental to the butterflies' host plants and may also harm unprotected eggs or larvae. Selective mowing is very important to avoid impacts on the butterflies. Surveys and avoidance measures, described under new Mitigation Measure 1 (below), would be employed.
- **Mechanical Clearing.** Mechanical clearing of invasive species could potentially disturb, trample, or uproot nearby individual viola plants. Surveys and avoidance measures, described under new Mitigation Measure 1 (below), would be employed.
- **Replanting and Restoration.** During replanting and restoration activities to develop small habitat islands for the endangered species, field biologists and volunteers could accidentally disturb or uproot individual viola plants.
- **Plant and Species Monitoring.** Field biologists and botanists conducting monitoring could accidentally trample individual viola plants.

The 2006 Biological Opinion concludes that implementation of the adopted HCP and the Proposed Action are not likely to jeopardize the continued existence of the callippe silverspot (USFWS 2006). Supplementary funding provided by Brookfield Northeast Ridge II LLC would enhance vegetation management and viola habitat on the Mountain. Implementation of 1982 EA/EIR mitigation measures and new Mitigation Measure 1 would reduce potential direct and indirect effects on viola habitat. Establishment of the endowment fund further reduces this impact to ***not significant*** and ***net beneficial***. No further mitigation is required.

#### Mitigation Measure 1—Surveys and Avoidance Measures for Butterfly Host Plants

Prior to conducting vegetation management work in a specified area, the Plan Operator will survey the target area for presence of butterfly host plants. Crews conducting hand work, herbicide application, mowing, or mechanical clearing work under the Habitat Manager will be trained in the identification of butterfly host plants and will avoid them. Whenever crews are unfamiliar with the native plant species and the endangered species host plants, all butterfly host plants in the area will be flagged and crews will be closely monitored during operations. All herbicides will be used in compliance with their labels. Herbicide drift will be minimized by applying the herbicide as

close to the target area as possible. Grazing and burning will be limited to grasslands with a low density of butterfly host plants in order to avoid trampling, damage, or loss.

### Alternative 2—1989 Northeast Ridge Plan

As shown in Table 4-4, the 1989 VTM is estimated to have impacted a total of 8.6 acres of viola habitat, which constitutes 24.2% of the viola habitat on the Northeast Ridge and 6.5% of the viola habitat on the Mountain. Development under the 1989 VTM would result in significantly greater development impacts than Alternative 1. The project would remove an important hilltop for the callippe silverspot, as well as an area that supports high densities of viola. Per recent conversations between the USFWS, County, City of Brisbane, and Brookfield Northeast Ridge II LLC, the impacts on callippe silverspot habitat and potential loss of callippe silverspot individuals could not be adequately mitigated under the 1989 VTM. Alternative 2 would also include indirect impacts associated with continuation of existing habitat management and monitoring efforts. Increased funding would not be available for habitat management, so gradual invasion of coastal scrub species would continue across the Mountain. Enhanced management of invasive brush species is necessary to fully mitigate impacts to viola habitat and callippe silverspot survival. Implementation of Alternative 2 would result in a ***significant and unmitigated*** impact.

### Alternative 3—No Action

The No Action alternative would include continuation of vegetation management and monitoring under the adopted HCP. However, continuation of the existing annual funding and management program would result in progressive invasion by non-native species and conversion of grasslands to brush and thatch habitat. The 2007 HMP reports that approximately 5.3 acres of grassland are converting to coastal scrub per year, and it is anticipated that this process will continue unless the management program is modified. Enhanced management of invasive brush species is necessary to fully mitigate impacts to viola habitat and callippe silverspot survival. Implementation of Alternative 3 would result in a ***significant and unmitigated*** impact.

## Loss of Hilltopping Habitat

The callippe silverspot is a hilltopping species. Males patrol for females back and forth on summits and ridgetops and females fly uphill to mate and downhill to oviposit on viola-covered slopes. The callippe silverspot have been documented along the ridge in habitat on both the north and south sides of Guadalupe Canyon Parkway.

## Alternative 1—Proposed Action

### Reconfiguration of the Northeast Ridge

The proposed temporary disturbance associated with the 2007 VTM would impact an area that is approximately 880 feet long and 100 to 200 feet wide, located on the south side of a ridgeline. This area is located approximately 100 feet south of Guadalupe Canyon Parkway (refer to Figure 2-3). This ridgeline has been shown to consistently support the callippe silverspot (TRA Annual Reports 2003-2005), as do hilltops and ridgeline areas to the north and east. The impact from grading on the south side of the ridgeline is anticipated to have a temporary impact because the topographic high point of the ridgeline will remain, and therefore continue to provide hilltopping habitat for the callippe silverspot in the future. After grading, the area will be restored to grassland habitat.

Existing, protected hilltop and ridgeline habitat is present on the north side of Guadalupe Canyon Parkway, approximately 200 feet north of the project area, and on Callippe Hill on the Northeast Ridge, approximately 100 feet east of the project area. Both of these sites provide important hilltopping habitat for the callippe silverspot and would provide suitable hilltops for callippe silverspot butterflies that would be temporarily displaced by project grading activities. The 2007 VTM also reduces impacts to hilltopping habitat by removing the development of UII-NI, an area that supports a high density of hilltopping habitat. There would be an overall decrease in the loss of downhill ovipositing habitat under the 2007 VTM than under the 1989 VTM. Impacts to hilltopping from the infrastructure grading near Unit I (which contains 0.8 acres of viola habitat) would be minor.

Impacts to the callippe silverspot under the proposed 2007 VTM have been mitigated to ***not significant*** through Brookfield Northeast Ridge II LLC's commitment to preserve high value hilltopping habitat at Callippe Hill and dedicate endowment funding for increased management of invasive plant species and enhancement of butterfly habitat. These measures will adequately mitigate for the direct loss of hilltopping habitat.

### Management and Monitoring of Conserved Habitat

Native annual grasslands would be enhanced within the Conserved Habitat, in accordance with the 2007 HMP, by using hand work, herbicide application, livestock grazing, prescribed or micro burning, mowing, mechanical clearing, and/or restoration techniques to enhance cover of native forbs and perennial grasses. However, incidental disturbance, trampling, interference, or loss may occur during vegetation management, as described above. The 2006 Biological Opinion concludes that implementation of the adopted HCP and the Proposed Action are not likely to jeopardize the continued existence of the callippe silverspot (USFWS 2006). Although minor temporary disturbance may occur during implementation of the management techniques, the increased vegetation management made possible through the endowment fund from Brookfield Northeast Ridge II LLC would protect and enhance hilltopping habitat over time. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). Establishment of the endowment fund ensures this impact is ***not significant*** and ***net beneficial***. No further mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

The 1989 VTM would result in a total loss of 8.6 acres of viola habitat and eliminate approximately ridgeline hilltopping habitat that is currently used by the callippe silverspot. The area that would be temporarily disturbed closest to Guadalupe Canyon Parkway is anticipated to have a large impact on the callippe silverspot. Development under the 1989 VTM would result in significantly greater development impacts than Alternative 1, namely in UII-NI which supports a high density of hilltopping habitat. The project would remove an important hilltop for the callippe silverspot, as well as an area that supports high densities of viola. Per recent conversations between the USFWS, County, City of Brisbane, and Brookfield Northeast Ridge II LLC, the impacts on callippe silverspot habitat and potential loss of callippe silverspot individuals cannot be adequately mitigated. Alternative 2 would also include indirect impacts associated with continuation of existing habitat management and monitoring efforts. Increased funding would not be available for habitat management, so gradual invasion of coastal scrub species would result in loss of viola hilltopping habitat. This impact is ***significant and unmitigated***.

### Alternative 3—No Action

The No Action alternative would include continuation of vegetation management and monitoring under the adopted HCP. However, continuation of the existing annual funding and management program would result in continued invasion by non-native species and conversion of grasslands to brush and thatch habitat. The 2007 HMP reports that approximately 5.3 acres of grassland are converting to coastal scrub per year, and it is anticipated that this process will continue unless the management program is modified. Continuation of existing management efforts would result in loss of grasslands and associated viola hilltopping habitat. Implementation of Alternative 3 would result in a ***significant and unmitigated*** impact.

## Barrier to Movement

The structural features of habitat can influence butterfly dispersal. Urbanization of the Crocker Industrial Park (600 feet wide at its narrowest point) is apparently a total barrier, dense clusters of tall trees are partial barriers, and paved roads and residential lots are partial barriers to butterfly movement. Scattered trees and dense brush are minimal barriers and cyclone fences, dirt roads, and scattered brush form no barrier.

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

The proposed 2007 VTM includes the construction of 71 homes within a permanent disturbance area of 16.67 acres. Since these homes would be two stories high and the permanent disturbance footprint of the development would range from approximately 50 to 1,300 feet across, it is anticipated that callippe

silverspot would consider it a partial to total barrier to movement. Temporary disturbances would not constitute a barrier to movement, as these areas would be revegetated following construction. Past studies have shown that an estimated 99% of callippe silverspot fly in an area 4,000 feet across (TRA 1982), so they are capable of crossing the maximum estimated 1,300-foot distance of the proposed development. The degree to which the development would be a barrier depends on callippe silverspot reaction to the height of the homes and the availability of lower elevation corridors and nectar/host plant islands. It is therefore important to maintain contiguous habitat along both sides of Guadalupe Canyon Parkway, located approximately 100 feet from UII-NII. The remaining narrow section of habitat along the edge of the homes (south of Guadalupe Canyon Parkway) ranges from approximately 87 ft to 250 ft in width, so callippe silverspot would have to locate this passageway after it has been restored from temporary construction disturbance. The callippe silverspot do, however, currently use the open space lands on the northern side of Guadalupe Canyon Parkway and would be able to continue to use this without interruption throughout construction and occupation of UII-NII. In addition, passive dispersal across the proposed development might occur.

The proposed development would be located in an area that is currently dominated by both annual grassland and blue gum eucalyptus trees. The grove of eucalyptus trees extends north to south through the project site and is approximately 25 to 350 feet wide. The callippe silverspot have been recorded passing through the eucalyptus trees in the narrow areas. However, in the widest areas, the cluster poses a preexisting partial barrier to callippe silverspot movement. Removing a portion of the eucalyptus trees and replacing them with residential development would increase the width of the partial barrier. However, the level of the development barrier would depend on the availability of nectar and host plant resources within the development. Impacts to butterfly movement from the infrastructure grading near Unit I (which contains 0.8 acres of viola habitat) would be minor.

Impacts to the callippe silverspot under the proposed 2007 VTM are mitigated to ***not significant*** through Brookfield Northeast Ridge II LLC's commitment to preserve the dispersal corridor along Guadalupe Canyon Parkway, preserve high value hilltopping habitat at Callippe Hill, and dedicate endowment funding for increased management of invasive plant species. These measures will adequately mitigate for the construction of residential development that may serve as barriers to movement.

### Management and Monitoring of Conserved Habitat

Native annual grasslands would be enhanced within the Conserved Habitat, in accordance with the 2007 HMP, by using hand work, herbicide application, livestock grazing, prescribed or micro burning, mowing, mechanical clearing, and/or restoration techniques to enhance cover of native forbs and perennial grasses. Although incidental disturbance, trampling, interference, or loss may occur during vegetation management, no new barriers to movement would be constructed. The 2006 Biological Opinion concludes that implementation of the adopted HCP and the Proposed Action are not likely to jeopardize the continued existence of the callippe silverspot (USFWS 2006). Rather, the increased

vegetation management made possible through the endowment fund from Brookfield Northeast Ridge II LLC would improve habitat conditions within and adjacent to partial barriers maintained by the Operator. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). Establishment of the endowment fund ensures this impact is ***not significant*** and ***net beneficial***. No further mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

The 1989 VTM includes the construction of 151 homes within a permanent disturbance area of 25.60 acres. As with development under the 2007 VTM, it is anticipated that callippe silverspot would view the residential neighborhood as a partial to total barrier to movement. As stated above, the degree to which the development would be a barrier depends on callippe silverspot reaction to the height of the homes and the availability of lower elevation corridors and nectar/host plant islands. Additionally, it is important to maintain contiguous habitat along both sides of Guadalupe Canyon Parkway. Development under the 1989 VTM would result in greater development impacts than Alternative 1. Construction and occupation of UII-NI would serve as a significant barrier to movement for the listed butterflies. Alternative 2 would also include indirect impacts associated with continuation of existing habitat management and monitoring efforts. Increased funding would not be available for habitat management, so gradual invasion of coastal scrub species and growth of partial barriers could potentially occur. This impact is ***significant and unmitigated***.

### Alternative 3—No Action

The No Action alternative would include continuation of vegetation management and monitoring under the adopted HCP. However, continuation of the management program under the existing limited annual funding regime likely would result in continued invasion by non-native species and conversion of grasslands to brush and thatch habitat. The 2007 HMP reports that approximately 5.3 acres of grassland are converting to coastal scrub per year, and it is anticipated that this process will continue unless the management program is modified. Continued invasion of coastal scrub species would gradually fragment patches of high quality grasslands habitat and likely result in growth of partial barriers (i.e., expansion of the Eucalyptus stand over time). Due to the likelihood of grassland conversion based on HMP monitoring, this impact is ***significant and unmitigated***.

## Habitat Fragmentation

Habitat fragmentation is the division of habitat into smaller and more isolated patches. If grassland habitat patches are reduced in size below a certain threshold, it is unlikely that sufficient host plants, nectar resources, hilltopping habitat, and varied slope and aspect to support viola habitat would be available to support a viable callippe silverspot population. As habitat patches become more isolated due to habitat fragmentation, the likelihood of adult butterflies dispersing from

one patch to another decreases and limits the opportunities for genetic exchange among populations.

## Alternative 1—Proposed Action

### Reconfiguration of the Northeast Ridge

UII-NII is located within an area of high callippe silverspot butterfly usage and extends to within 100 feet of Guadalupe Canyon Parkway. Callippe silverspot to the west of the development would have to traverse across either the development itself, or through the narrow band of habitat along either side of Guadalupe Canyon Parkway to access high quality hilltopping habitat on the Northeast Ridge. As described above, construction of UII-NII under the 2007 VTM would constitute a partial to total barrier to movement, depending on the availability of nectar and host plant resources within the development. However, the callippe silverspot would still be able to move around the development to the north.

The 2007 VTM results in less habitat fragmentation and greater preservation of high quality hilltopping habitat than the 1989 VTM. The 2007 VTM eliminates UII-NI, which would have required the butterflies to traverse around urban development from habitat located southeast of the neighborhood. The 2007 VTM would not fragment callippe silverspot habitat to the point where portions of the population are isolated from one another. Habitat fragmentation from the infrastructure grading near Unit I (which contains 0.8 acres of viola habitat) would be minor.

Impacts to the callippe silverspot under the proposed 2007 VTM are mitigated to ***not significant*** through Brookfield Northeast Ridge II LLC's commitment to preserve the dispersal corridor along Guadalupe Canyon Parkway, preserve high value hilltopping habitat at Callippe Hill, and dedicate endowment funding for increased management of invasive plant species. The permanent dedication of a large, contiguous block of grassland habitat connected to other populations will adequately mitigate for the construction of residential development that may contribute to habitat fragmentation.

### Management and Monitoring of Conserved Habitat

Native annual grasslands would be enhanced within the Conserved Habitat, in accordance with the 2007 HMP, by using hand work, herbicide application, livestock grazing, prescribed or micro burning, mowing, mechanical clearing, and/or restoration techniques to enhance cover of native forbs and perennial grasses. Although incidental disturbance, trampling, interference, or loss may occur during vegetation management, butterfly habitat would not be fragmented by these activities. In fact, high quality grassland patches will be expanded and connected by management efforts. The 2006 Biological Opinion concludes that implementation of the adopted HCP and the Proposed Action are not likely to jeopardize the continued existence of the callippe silverspot (USFWS 2006). Rather, the increased vegetation management made possible through the endowment fund from Brookfield Northeast Ridge II LLC would protect and enhance butterfly habitat. Annual grassland patches that are currently fragmented would be connected over time, thereby improving conditions for the endangered

butterflies. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). Establishment of the endowment fund ensures this impact is ***not significant*** and ***net beneficial***. No further mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

The 1989 VTM includes the construction of 151 homes within a permanent disturbance area of 25.60 acres. As with development under the 2007 VTM, it is anticipated that callippe silverspot would view the residential neighborhood as a partial to total barrier. This would divide the existing native grasslands patches, including viola habitat for the callippe silverspot. Development under the 1989 VTM would result in greater development impacts than Alternative 1. Construction and occupation of UII-NI would serve as a significant barrier to movement for the listed butterflies. The project would remove an important hilltop for the callippe silverspot, as well as an area that supports high densities of viola. Per recent conversations between the USFWS, County, City of Brisbane, and Brookfield Northeast Ridge II LLC, the impacts on callippe silverspot habitat and potential loss of callippe silverspot individuals cannot be adequately mitigated. Alternative 2 would also include indirect impacts associated with continuation of existing habitat management and monitoring efforts. Increased funding would not be available for habitat management, so gradual invasion of coastal scrub species would continue across the Mountain. Continued brush invasion would gradually fragment patches of high quality grasslands habitat and potentially isolate local butterfly populations. Therefore this impact is ***significant and unmitigated***.

### Alternative 3—No Action

The No Action alternative would include continuation of vegetation management and monitoring under the adopted HCP. However, continuation of the existing annual funding and management program would result in continued invasion by non-native species and conversion of grasslands to brush and thatch habitat. The 2007 HMP reports that approximately 5.3 acres of grassland are converting to coastal scrub per year, and it is anticipated that this process will continue unless the management program is modified. Continued invasion of coastal scrub species would gradually fragment patches of high quality grasslands habitat and potentially isolate local butterfly populations. However, this impact is not certain and therefore ***not significant***. No mitigation is required.

## Disturbance to Individuals (Harassment)

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

Disturbance to individual butterflies could occur due to increased human and heavy machinery activity during site preparation and construction at the infrastructure grading site and throughout development of UII-NII. Frequent

disturbance may have negative impacts on reproductive success since the callippe silverspot may have to make multiple attempts to successfully oviposit or forage; may have to move to less suitable areas to forage or oviposit; or may have increased difficulty in locating a mate. Overall, the potential for disturbance temporarily degrades the quality of the habitat adjacent to the proposed project. In addition, increased levels of dust caused by construction or other earth moving activities could clog the spiracles of butterfly adults and early larval stages located adjacent to or downwind of the site. This could asphyxiate the butterflies (USFWS 2006). The inclusion of dust control measures during construction activities should minimize any potential effects to the butterflies.

Upon completion, the proposed development would result in a permanent increase in human presence and activity in the Northeast Ridge area. Residents in the proposed development are likely to use the Northeast Ridge recreationally due to its close proximity. These users could impact the callippe silverspot through straying off established trails and trampling viola and/or collecting butterflies with nets. Both activities represent take and could result in butterfly injury or death. However, impacts to the callippe silverspot under the proposed 2007 VTM are mitigated to ***not significant*** through Brookfield Northeast Ridge II LLC's commitment to preserve the dispersal corridor along Guadalupe Canyon Parkway, preserve high value hilltopping habitat at Callippe Hill, and dedicate endowment funding for increased management of invasive plant species. These measures will adequately mitigate for the construction of residential development that may increase disturbance to individuals.

### Management and Monitoring of Conserved Habitat

Native annual grasslands would be enhanced within the Conserved Habitat, in accordance with the 2007 HMP, by using hand work, herbicide application, livestock grazing, prescribed or micro burning, mowing, mechanical clearing, and/or restoration techniques to enhance cover of native forbs and perennial grasses. Such activities would result in some increased human presence during application or implementation of the management techniques. Workers may accidentally trample or take individuals during handwork, mechanical clearing, grazing, and mowing. Prescribed and pile burning would increase human activity the greatest due to the presence of CDF or fire department staff on hand to control safety hazards. Additionally, biological monitoring techniques may result in disturbance or take of the callippe silverspot during capture activities for identification and/or mark and recapture activities.

The 2006 Biological Opinion concludes that implementation of the adopted HCP and the Proposed Action are not likely to jeopardize the continued existence of the callippe silverspot (USFWS 2006). Although minor temporary disturbance may occur during implementation of the management techniques, the increased vegetation management made possible through the endowment fund from Brookfield Northeast Ridge II LLC would protect and enhance butterfly habitat over time. Take authorization would not be granted for herbicide application, per USFWS's 1998 policy regarding the coverage of pesticide and herbicide use under §10(a)(1)(B) ITPs. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). Establishment of the endowment fund ensures this impact is ***not significant***. No mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

The 1989 VTM includes the construction of 151 homes within a permanent disturbance area of 25.60 acres. As with development under the 2007 VTM, it is anticipated that human activity that results from the residential subdivision will disrupt individuals, degrade nearby viola habitat, and take callippe silverspot through trampling, generation of dust, and capture. Vegetation management and monitoring activities may also accidentally take individuals during handwork, mechanical clearing, grazing, and mowing. However, this disturbance would be minor and not above baseline conditions. Development under the 1989 VTM would result in greater development impacts than Alternative 1. However, implementation of the 1982 EA/EIR mitigation measures would reduce this impact to ***not significant***. No mitigation is required.

### Alternative 3—No Action

The No Action alternative would include continuation of vegetation management and monitoring under the adopted HCP. Take authorization has not been granted for the callippe silverspot and bay checkerspot for current management efforts, and potentially harmful activities to the butterflies are avoided. Avoidance would continue under Alternative 3. Therefore there would be ***no impact***. No mitigation is necessary.

# Effects on the Bay Checkerspot Butterfly

The bay checkerspot occurs in areas where it's host plants, dwarf plantain and purple owl's clover, are located. However, since the bay checkerspot no longer occurs on the Mountain, the presence of the dwarf plantain or purple owl's clover does not warrant the assumption of butterfly occurrence. As such, the following analysis documents loss of designated Critical Habitat.

## Loss of Critical Habitat

The USFWS designated Critical Habitat for the bay checkerspot on San Bruno Mountain in 2001. Approximately 748 acres of the Mountain are designated Critical Habitat, situated mostly within the State and County Park. The acreage defined by the USFWS is located on the eastern half of the Mountain, and is located above the 500 foot elevation contour (refer to Figure 3-6).

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

Take of the bay checkerspot butterfly and its habitat would be similar to that described for the callippe silverspot since the bay checkerspot's host plant also requires grassland habitat. Although construction would not kill, injure, harass or harm butterflies (because they do not currently occupy the Mountain),

destruction of the species' habitat and foodplants would preclude the use of the area by the animal in the future (USFWS 2006). However, neither the infrastructure grading nor housing construction under the 2007 VTM would impact designated Critical Habitat for the bay checkerspot. There is no historical information that it occurred on the Northeast Ridge parcel. There would be ***no impact***. No mitigation is necessary.

### Management and Monitoring of Conserved Habitat

The bay checkerspot Critical Habitat on San Bruno Mountain would benefit from the expanded habitat management work afforded by the Proposed Action. Implementation of the 2007 HMP would improve bay checkerspot habitat by reducing thatch, removing exotic species that are crowding out its host plants, and increasing the quality of grasslands that support the host plants. At present, microweeds are invading areas where the host plants for the bay checkerspot occur. The build up of weedy species such as English plantain (*Plantago lanceolata*) and fileree (*Erodium cicutarium*) can eventually eliminate the dwarf plantain and purple owl's clover that support the butterfly. Mowing, grazing and weed wacking would favor the native species over the non-natives and open up the grasslands for the host plants. Though management of invasive species and enhancement of preferred habitat for the Species of Concern may result in incidental take of individuals, the collective improvement and protection of habitat that will result is significant. Because they are also located in grasslands, potential disturbance of bay checkerspot host plants are comparable to those impacts from vegetation management that are described under "Loss of Viola Habitat" above.

All of the bay checkerspot Critical Habitat is within the HCP's Conserved Habitat area, and the vegetation management that would be conducted to benefit the callippe silverspot, mission blue, and San Bruno elfin would also benefit the bay checkerspot. The 2006 Biological Opinion concludes that the Proposed Action is not expected to appreciably diminish the value of Critical Habitat for the bay checkerspot, or prevent the Critical Habitat from sustaining its role in the conservation and recovery of the species. Vegetation management and restoration activities that would remove or control exotic plant species would be of a relative small size and discountable nature (USFWS 2006). Additionally, the measures described to avoid impacts of HMP activities for the callippe silverspot would also apply to bay checkerspot host plants. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). Therefore this impact is ***not significant***. No further mitigation is required.

## Alternative 2—1989 Northeast Ridge Plan

The 1989 VTM would not impact designated Critical Habitat for the bay checkerspot. There is no historical information that it occurred on the Northeast Ridge parcel. However, Alternative 2 would include direct and indirect impacts associated with continuation of existing habitat management and monitoring efforts. Increased funding would not be available for habitat management, so gradual invasion of coastal scrub species would continue across the Mountain. Although implementation of the 1982 EA/EIR mitigation measures (refer to Table 4-1) would reduce this impact, continuation of existing management

efforts would result in the loss of annual grasslands and host plants over time. Implementation of Alternative 2 would result in a ***significant and unmitigated*** impact.

### Alternative 3—No Action

The No Action alternative would include continuation of vegetation management and monitoring under the adopted HCP. However, continuation of the existing annual funding and management program would result in continued invasion by non-native species and conversion of grasslands to brush and thatch habitat. The 2007 HMP reports that approximately 5.3 acres of grassland are converting to coastal scrub per year, and it is anticipated that this process will continue unless the management program is modified. Implementation of Alternative 3 would result in a ***significant and unmitigated*** impact.

# Effects on Other Listed Species

## Other Special Status Butterflies

Other special status butterflies with potential to occur on the Mountain (not including the callippe silverspot and bay checkerspot, described above) include the mission blue and San Bruno elfin butterflies.

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

Potential take of the mission blue and San Bruno elfin butterflies and their habitat would be similar to that described for the callippe silverspot since their host plants also require grassland habitat. Development under the 2007 VTM would result in the loss of 12.01 acres of the grassland habitat (including 1.07 acres that were disturbed by the infrastructure grading). Potential impacts on the listed butterflies results directly from loss of habitat that supports the animal's host plants, but also indirectly from the placement of a movement barrier between colonies, habitat fragmentation, and the introduction of non-native plants. Take could also occur through direct loss of individuals during construction activities or human activities once the development is occupied.

No host plants for the San Bruno elfin are found within the Northeast Ridge development area, however, and therefore there is no potential for take under the 2007 VTM. Because take authorization for the mission blue was analyzed under the 1982 EA and issued by the ITP, this impact is ***not significant***. No mitigation is required.

#### Management and Monitoring of Conserved Habitat

Butterfly habitat on San Bruno Mountain would benefit from the expanded management work afforded by the Proposed Action. Native annual grasslands would be enhanced within the Conserved Habitat, in accordance with the 2007 HMP, by using hand work, herbicide application, livestock grazing, prescribed or

micro burning, mowing, mechanical clearing, and/or restoration techniques to enhance cover of native forbs and perennial grasses. Because they are also located in grasslands, potential disturbance of mission blue and San Bruno elfin host plants are comparable to those impacts from vegetation management that are described under "Loss of Viola Habitat" above. The 2006 Biological Opinion concludes that implementation of the adopted HCP and the Proposed Action are not likely to jeopardize the continued existence of the mission blue and San Bruno elfin (USFWS 2006). Although minor temporary disturbance may occur during implementation of the management techniques, the increased vegetation management made possible through the endowment fund from Brookfield Northeast Ridge II LLC would protect and enhance annual grasslands habitat over time. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). Establishment of the endowment fund ensures this impact is ***not significant*** and ***net beneficial***. No further mitigation is required.

## Alternative 2—1989 Northeast Ridge Plan

Potential take of the mission blue and San Bruno elfin butterflies and their habitat would be similar to that described for the callippe silverspot since their host plants also require grassland habitat. Development authorized by the 1989 VTM would result in the loss of 29.31 acres of the grassland habitat that supports the mission blue. Additionally, supplementary funding would not be available for habitat management, so gradual invasion of coastal scrub species would continue across the Mountain.

No host plants for the San Bruno elfin are found within the Northeast Ridge development area, however, and therefore there is no potential for take under the 2007 VTM. Although implementation of the 1982 EA/EIR mitigation measures (refer to Table 4-1) would reduce this impact, continuation of existing management efforts would result in the loss of annual grasslands and host plants for the mission blue over time. Implementation of Alternative 2 would result in a ***significant and unmitigated*** impact.

## Alternative 3—No Action

The No Action alternative would include continuation of vegetation management and monitoring under the adopted HCP. However, continuation of the existing annual funding and management program would result in continued invasion by non-native species and conversion of grasslands to brush and thatch habitat. The 2007 HMP reports that approximately 5.3 acres of grassland are converting to coastal scrub per year, and it is anticipated that this process will continue unless the management program is modified. Implementation of Alternative 3 would result in a ***significant and unmitigated*** impact.

# Special Status Amphibians

Special status amphibians with potential to occur on the Mountain include the San Francisco garter snake and California red-legged frog. Occurrences of the San Francisco garter snake and California red-legged frog were reported on San Bruno Mountain up until the early 1970s. However, focused surveys in the 1980s and early 1990s for these species were conducted and neither species was detected. Wetland habitats associated with Colma Creek and Wax Myrtle Ravine that may have supported these species were destroyed by road building and urbanization prior to the formation of Conserved Habitat under the 1983 HCP. Due to the lack of significant wetland habitats on San Bruno Mountain, it is unlikely these species could be supported. There have been no recorded observations of California red-legged frogs or San Francisco garter snakes on San Bruno Mountain during the 25-year span of the HCP (TRA 2007). Therefore, there would be ***no impact*** under any alternative. No mitigation is required.

# Special Status Birds

Special status birds with potential to occur on the Mountain include the Golden eagle, Bald eagle, American peregrine falcon, Northern harrier, White-tailed kite, Cooper's hawk, Sharp-shinned hawk, and Loggerhead shrike.

## Alternative 1—Proposed Action

### Reconfiguration of the Northeast Ridge

Construction of UII-NII would include 71 new dwelling units. Additionally, infrastructure grading has occurred on 1.07 acres in Unit I. Construction at the UII-NII site would include removal of portions of a eucalyptus grove that provides nesting sites and annual grassland that serves as forage and hunting area. Potential significant impacts on special-status birds associated with the Northeast Ridge include (but are not limited to):

- direct mortality from the collapse of underground burrows resulting from the movement of equipment and vehicles through the program area;
- loss of breeding, foraging, and refuge habitat resulting from the permanent removal of grasslands;
- loss of nesting habitat resulting from permanent removal of large Eucalyptus trees during construction;
- abandoned eggs or young and subsequent nest failure for special-status nesting birds as a result of construction-related noises; and
- loss of suitable foraging habitat for special-status raptor species.

The 2007 VTM represents a reduction of 17.3 acres of grassland loss from the 1989 VTM. However, take of special status bird species could potentially occur during conversion of grasslands to residential development, particularly ground- and shrub-nesting birds such as the Northern harrier and Loggerhead shrike. The

1982 EA/EIR mitigation measure addressing protection of Eucalyptus trees shall continue to apply (refer to Table 4-1). Implementation of Mitigation Measure 2 (below) would reduce this impact to ***not significant***.

### Management and Monitoring of Conserved Habitat

Native annual grasslands would be enhanced within the Conserved Habitat, in accordance with the 2007 HMP, by using a variety of vegetation management techniques. As such, all management activities have the potential to disturb nesting, foraging, and refuge habitat for special status birds. Additionally, accidental drift from herbicide application could contaminate food sources or nesting sites. Smoke from prescribed, micro, or and pile burns could disturb individual birds and their nests. Gas- and electrical-powered equipment used in hand work, mowing, and mechanical clearing could produce noise that also disturbs individual birds and their nests. Finally, removal of trees and woody vegetation could disturb tree nests for special status birds. Implementation of new Mitigation Measure 2 would reduce this impact to ***not significant***.

#### Mitigation Measure 2: Survey and Avoidance Measures for Tree-, Shrub-, and Ground-Nesting Special-Status Birds

The Plan Operator or authorized developer will conduct all tree removal and grading during the nonbreeding season for most special-status birds (generally September to February). If construction or vegetation management activities are scheduled to occur during the breeding season for special-status and non-special-status migratory birds and raptors (generally March to August), a qualified wildlife biologist will be retained to conduct focused nesting surveys in appropriate habitat prior to the start of construction or vegetation management. The nesting surveys will be conducted 15 days prior to initiation of construction or vegetation management activities that will occur in suitable habitat between March 1 and August 15. If no active nests are detected during these surveys, no additional mitigation is required.

If surveys indicate that special-status bird nests are found in any areas that would be directly affected by construction or vegetation management activities, a no-disturbance buffer will be established around the site to avoid disturbance or destruction of the nest site until after the breeding season or after a qualified wildlife biologist determines that the young have fledged (usually late June to mid-July). The extent of these buffers will be determined by the biologist (coordinating with USFWS) and will depend on the level of noise or construction disturbance, line of sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers.

## Alternative 2—1989 Northeast Ridge Plan

Construction of UII-NI and UII-NII under the 1989 VTM would include 151 dwelling units. As described for the 2007 VTM above, construction and occupation of these neighborhoods would affect special status birds by the collapse of underground burrows, loss of breeding, foraging, and refuge habitat, and abandoned eggs or young and subsequent nest failure. Development under the 1989 VTM would result in greater development impacts than Alternative 1,

including disturbance of special status birds. An additional 80 housing units, or 8.93 acres of developed lands, would be constructed under Alternative 2. Noise, trampling, and habitat disturbance from vegetation management activities would remain as under baseline conditions. Continuation of the existing annual funding and management program would result in progressive invasion by non-native brush and potential loss of ground- and shrub-nesting habitat. Implementation of the mitigation measures in the 1982 EA/EIR and new Mitigation Measure 1 (above) would reduce this impact to ***not significant***. No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would include continuation of vegetation management and monitoring under the adopted HCP. Noise, trampling, and habitat disturbance from vegetation management activities would remain as under baseline conditions. Continuation of the existing annual funding and management program would result in progressive conversion of grasslands to brush habitat and potential loss of ground- and shrub-nesting habitat. Implementation of the mitigation measures in the 1982 EA/EIR and new Mitigation Measure 1 (above) would reduce this impact to ***not significant***. No mitigation is required.

# 4.4 Effects on the Social Environment

## Effects on Cultural Resources

The following analysis documents that potential impacts pertaining to cultural resources are not considered significant, because they would not result in any of the subsequent conditions

- Cause a substantial adverse change in the significance of a historical resource.
- Cause a substantial adverse change in the significance of an archaeological resource.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

## Historical Resources

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

The San Bruno Mountain area remained largely undeveloped up to the time when the environmental documentation and development process for the Northeast Ridge began. A records search with the Northwest Information Center of the California Historical Resources Information System (NWIC), Sonoma State

University concluded that there were no historical resources recorded at the site. Thus, the Proposed Action would not result in any substantial adverse changes in the significance of historical resources. All mitigation measures and requirements identified in the 1983 EIR and 1989 Addendum for cultural resources would remain in effect for the proposed project (refer to Table 4-1). Therefore this impact is ***not significant***. No further mitigation is required.

#### Management and Monitoring of Conserved Habitat

Vegetation management and monitoring would not disturb known historical resources; however, such activities could potentially impact unknown resources. Uprooting of woody vegetation during hand work and mechanical clearing could potentially uncover historical resources under the topsoil. Additionally, prescribed and pile burning could accidentally damage or destroy unknown resources. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). Therefore this impact is ***not significant***. No further mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

As described above, a records search with the NWIC concluded that there were no historical resources recorded at the site. Continuation of vegetation management and monitoring under the existing funding program would avoid known resources. Additionally, implementation of mitigation measures and requirements identified in the 1983 EIR and 1989 Addendum for cultural resources would reduce this impact to ***not significant***. No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would include no construction activities, changes in existing land uses, or new management activities. Management and monitoring on the Mountain would be conducted so as to avoid impacts to known historical resources. This impact is ***not significant***. No mitigation is required.

## Archaeological Resources

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

Although construction of UII-NII would disturb 19.64 acres and infrastructure grading has already disturbed 1.07 acres in Unit I, the proposed project would not disturb known archeological resources or result in any substantial adverse changes in the significance of archaeological resources. All mitigation measures and requirements identified in the 1983 EIR and 1989 Addendum for cultural resources would remain in effect for the proposed project (refer to Table 4-1). Therefore this impact is ***not significant***. No further mitigation is required.

#### Management and Monitoring of Conserved Habitat

Vegetation management and monitoring would not disturb known archeological resources; however, such activities could potentially impact unknown resources. Uprooting of woody vegetation during hand work and mechanical clearing could potentially uncover historical resources under the topsoil. Additionally, prescribed and pile burning could accidentally damage or destroy unknown resources. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). Therefore this impact is ***not significant***. No further mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

Although construction of UII-NI and UII-NII would include 151 dwelling units, the proposed project would not disturb known archeological resources or result in any substantial adverse changes in the significance of archaeological resources. Continuation of vegetation management and monitoring under the existing funding program would avoid known resources. Additionally, implementation of mitigation measures and requirements identified in the 1983 EIR and 1989 Addendum for cultural resources would reduce this impact to ***not significant***. No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would include no construction activities, changes in existing land uses, or new management activities. Management and monitoring on the Mountain would be conducted so as to avoid impacts to any known archeological resources. This impact is ***not significant***. No mitigation is required.

## Paleontological Resources

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

Construction of 71 dwelling units under the proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. All mitigation measures and requirements identified in the 1983 EIR and 1989 Addendum for cultural resources would remain in effect for the proposed project (refer to Table 4-1). This impact is ***not significant***. No further mitigation is required.

#### Management and Monitoring of Conserved Habitat

Vegetation management and monitoring would not disturb known historical resources; however, such activities could potentially impact unknown resources. Uprooting of woody vegetation during hand work and mechanical clearing could potentially uncover paleontological resources under the topsoil. Additionally, prescribed and pile burning could accidentally damage or destroy unknown resources. The 1982 EA/EIR mitigation measures shall continue to be

implemented on the Mountain (refer to Table 4-1). Therefore this impact is ***not significant***. No further mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

Construction of 151 dwelling units under the proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Implementation of all mitigation measures and requirements identified in the 1983 EIR and 1989 Addendum for cultural resources would reduce this impact to ***not significant***. No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would include no construction activities, changes in existing land uses, or new management activities. Management and monitoring on the Mountain would be conducted so as to avoid impacts to any known paleontological resources. This impact is ***not significant***. No mitigation is required.

# Effects on Land Use

The following analysis documents that potential impacts pertaining to land use and agricultural resources are not considered significant, because they would not result in any of the subsequent conditions

- Physically divide an established community.
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project.
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

## Physically Divide a Community

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

Implementation of the Proposed Action would not physically divide an established community. The proposed project itself is part of a planned larger residential development on the Northeast Ridge. Construction of UII-NII would contribute to the housing stock within the City. Therefore this impact is ***not significant***. No mitigation is required.

#### Management and Monitoring of Conserved Habitat

Ongoing management and monitoring on the Mountain's protected lands would not physically divide a community. There would be ***no impact***. No mitigation is necessary.

### Alternative 2—1989 Northeast Ridge Plan

Construction of UII-NI and UII-NII under the 1989 VTM would not physically divide an established community. These neighborhoods are part of a planned larger residential development on the Northeast Ridge and would contribute to the housing stock within the City. Therefore this impact is ***not significant***. No mitigation is required.

### Alternative 3—No Action

The No Action alternative would include no construction activities. Therefore, it would not physically divide a community. There would be ***no impact***. No mitigation is necessary.

## Conflict with Land Use Plan, Policy, or Regulation

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

The Northeast Ridge development was included in the 1982 HCP as a "Planned Parcel." Both the 1983 EIR and 1989 Addendum concluded that the project was in conformance with all applicable policies of the 1980 Brisbane General Plan (and the 1985 Housing Element, in the case of the 1989 Addendum). The proposed 2007 VTM is consistent with growth anticipated under the City's 1994 General Plan and falls within the population projections prepared by ABAG; therefore, the project would not conflict with any applicable land use plan, policy, or regulation. Therefore this impact is ***not significant***. No mitigation is required.

#### Management and Monitoring of Conserved Habitat

Open space on the Mountain is managed for the benefit of covered butterfly species and their habitat. All Conserved Habitat is designated as open space on the City of Brisbane General Plan and County of San Mateo General Plan. Vegetation management and monitoring activities under the 2007 HMP would not conflict with this open space designation, nor any local plans, policies, or regulations. Therefore this impact is ***not significant***. No mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

The Northeast Ridge development was included in the 1982 HCP as a "Planned Parcel." Both the 1983 EIR and 1989 Addendum concluded that the project was in conformance with all applicable policies of the 1980 Brisbane General Plan (and the 1985 Housing Element, in the case of the 1989 Addendum). The 1989 VTM was also included as growth anticipated under the City's 1994 General Plan. Therefore this impact is ***not significant***. No mitigation is required.

### Alternative 3—No Action

The No Action alternative would include no construction activities. Therefore, there would be no project-related conflict with applicable land use plans, policies, or regulations. There would be ***no impact***. No mitigation is necessary.

## Conflict with Habitat Conservation Plan

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

The Northeast Ridge development was included in the 1982 HCP as a "Planned Parcel." Construction of the Northeast Ridge project was anticipated at that time and the impacts associated with its development were mitigated by provisions of the HCP and the 1982 EA/EIR. The USFWS also took into account potential impacts in its analysis for issuance of the ITP. The Proposed Action includes the final phase of development in UII-NII, under a reconfigured development plan that minimizes potential impacts to the callippe silverspot and bay checkerspot. While development of UII-NI was included in the 1983 and 1989 VTMs, it is now proposed to remain as Conserved Habitat and managed under the HCP. The 2007 VTM results in more undisturbed open space and less permanently developed area. This reconfiguration is consistent with the HCP's goal of the long-term survival of the Mountain's endangered species, as well as the HCP's preservation strategy (as opposed to restoration) for butterfly habitat. Because the Proposed Action supports implementation of the HCP, this impact is ***beneficial***. No mitigation is necessary.

#### Management and Monitoring of Conserved Habitat

Enhanced vegetation management made possible through the endowment fund from Brookfield Northeast Ridge II LLC would implement the adopted HCP. All management and monitoring on the Mountain's protected lands would be conducted in accordance with the HCP, and would facilitate protection and expansion of habitat for the Species of Concern. Because the Proposed Action supports implementation of the HCP, this impact is ***beneficial***. No mitigation is necessary.

### Alternative 2—1989 Northeast Ridge Plan

The Northeast Ridge development was included in the 1982 HCP as a "Planned Parcel." Construction of the Northeast Ridge project was anticipated at that time and the impacts associated with its development were mitigated by provisions of the HCP and the 1982 EA/EIR. The Northeast Ridge project was revised in 1989 and the 1989 Addendum addressed potential impacts and mitigation associated with its development. Although development under the 1989 VTM would result in greater impacts to callippe silverspot and bay checkerspot habitat than Alternative 1, it is consistent with the adopted HCP. There would be ***no impact***. No mitigation is necessary.

### Alternative 3—No Action

The No Action alternative would continue to implement the adopted HCP through limited management and monitoring. Therefore, there would be no project-related conflict with the adopted HCP. There would be ***no impact***. No mitigation is necessary.

## Incompatibility with Adjacent Land Uses

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

The proposed 2007 VTM would include construction of 71 residential homes in UII-NII. Additionally, 1.07 acres have already been disturbed during infrastructure grading in Unit I. Although the construction activities might temporarily disrupt adjacent residences, these are not considered significant impacts. Once inhabited, the new residences would be compatible with the existing neighborhood. Development under the 2007 VTM would result in fewer development impacts than Alternative 2. Therefore this impact is ***not significant***. No mitigation is required.

#### Management and Monitoring of Conserved Habitat

Land uses adjacent to the Mountain include parks and open space, residential neighborhoods, commercial, and industrial. Hand work, mowing, and mechanical clearing – all activities that may employ gas- or electric-powered equipment – may result in minor noise and emissions. However, these impacts would be temporary and sporadic, and are considered less than significant. Additionally, prescribed, micro, and pile burning have the potential to accidentally ignite an urban-interface fire hazard. Because of the need to ensure adequate protection of species and habitat, vegetation management under the 2007 HMP includes a wide range of measures to eliminate or minimize incompatibility with surrounding uses. All burning on the Mountain would require assistance from CDF and/or the local fire departments, a permit from the BAAQMD, and a burn plan approved by CDF. With implementation of these minimization measures, this impact is ***not significant***. No further mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

The 1989 VTM would include construction of 151 additional residential homes in the Northeast Ridge. Although the construction activities might temporarily disrupt adjacent residences, these are not considered significant impacts. Development under the 1989 VTM would result in greater development impacts than Alternative 1, including minor noise and emissions generated by vegetation management activities on the Mountain. However, this impact is ***not significant***. No mitigation is required.

### Alternative 3—No Action

The No Action alternative would include no construction activities. Management activities – including hand work, herbicide application, and mowing – would continue as under baseline conditions. Minor noise and emissions may be generated by management activities, but these impacts would be temporary and sporadic. Therefore this impact is ***not significant***. No mitigation is required.

# Effects on Noise

The following analysis documents that potential impacts pertaining to noise are not considered significant, because they would not result in any of the subsequent conditions

- Exposure of persons to or generation of noise levels in excess of standards.
- Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels.
- A substantial permanent increase in ambient noise levels in the project vicinity.

## Excessive Noise Levels

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

Construction activities for 71 dwelling units, roadways and driveways, and associated infrastructure in Unit II would temporarily increase noise levels in the Northeast Ridge during the construction period. Additionally, infrastructure grading and slope stabilization activities near Unit I would temporarily increase noise levels. Earth-moving activities could temporarily expose persons to increased noise levels of up to 90 dBA at the source. The City of Brisbane sets a maximum allowable noise level for construction equipment at 83 dBA at a distance of 25 feet from the source. Development under the 2007 VTM would result in fewer development impacts than Alternative 2, including a shorter construction period due to removal of UII-NI from development. Adherence to the City's Municipal Code 8.28.060, as well as the application of the mitigation measure outlined in the 1989 Addendum (refer to Table 4-1), would reduce potential noise impacts. Therefore this impact is ***not significant***. No further mitigation is required.

#### Management and Monitoring of Conserved Habitat

Ongoing management and monitoring activities may result in temporary, sporadic incidences of noise. Hand work, mowing, and mechanical clearing – all activities that may employ gas- or electric-powered equipment – may result in minor noise generation. However, because the Mountain is an open space, most

vegetation management practices would not be auditable from adjacent urban land uses. Therefore this impact is ***not significant***. No mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

Construction activities for 151 dwelling units and associated infrastructure would temporarily increase noise levels in the Northeast Ridge during the construction period. Development under the 1989 VTM would result in greater development impacts than Alternative 1, including noise generation for a longer construction period. An additional 80 housing units, or 8.93 acres of developed lands, would be constructed under Alternative 2. Additionally, minor noise may be generated by vegetation management activities on the Mountain. However, implementation of the mitigation measure outlined in the 1989 Addendum (refer to Table 4-1) would reduce potential noise impacts to ***not significant***. No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would include no construction-generated noise activities. Hand work, mowing, and mechanical clearing may result in minor noise generation, but these impacts would be temporary and sporadic. Therefore this impact is ***not significant***. No mitigation is required.

## Excessive Ground Borne Vibration

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

The use of earth-moving and other construction equipment for the 71 dwelling units and associated infrastructure may result in temporary exposure to groundborne vibration or groundborne noise levels. This groundborne vibration and noise is not expected to be excessive and would be short-term in its duration. Development under the 2007 VTM would result in fewer development impacts than Alternative 2, including noise and vibration generation for a shorter construction period due to removal of UII-NI from development. The 1989 Addendum outlines a noise mitigation measure that would apply to the proposed project to reduce construction-related noise impacts (refer to Table 4-1). Therefore this impact is ***not significant***. No mitigation is required.

#### Management and Monitoring of Conserved Habitat

Vegetation management and monitoring activities are unlikely to result in incidences of groundborne vibration. There would be ***no impact***. No mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

Construction activities for 151 dwelling units and associated infrastructure would result in temporarily temporary exposure to groundborne vibration or

groundborne noise levels in the Northeast Ridge. Development under the 1989 VTM would result in greater development impacts than Alternative 1, including noise generation for a longer construction period. An additional 80 housing units, or 8.93 acres of developed lands, would be constructed under Alternative 2. However, implementation of the mitigation measure outlined in the 1989 Addendum (refer to Table 4-1) would reduce potential noise impacts to ***not significant***. No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would include no construction-generated noise activities. Vegetation management and monitoring activities are unlikely to result in incidences of groundborne vibration. There would be ***no impact***. No mitigation is required.

## Permanent Increase in Ambient Noise Levels

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

The project's residential and open space uses would not substantially increase ambient noise levels in the study area above existing levels. UII-NII would not generate enough traffic or other noise source to create a perceptible change in noise in the vicinity of the project site. No substantial long-term increase in ambient noise levels is expected to result. Although the project site is not located within an airport land use plan or within two miles of the San Francisco International Airport, the 1983 EIR stated that aircraft overflight may expose residents to a CNEL of 65 dBA. During the day, aircraft noise usually increases current noise levels anywhere from 5 to 15 dBA; this increase is somewhat higher at night when ambient noise levels are lower. Mitigation measures in the 1983 EIR and 1989 Addendum that recommend incorporating noise-reducing factors into building design would still apply (refer to Table 4-1). Therefore this impact is ***not significant***. No further mitigation is required.

#### Management and Monitoring of Conserved Habitat

Ongoing management and monitoring activities may result in temporary, sporadic incidences of noise. Hand work, mowing, and mechanical clearing – all activities that may employ gas- or electric-powered equipment – may result in minor noise generation. However, because the Mountain is an open space, most vegetation management practices would not be auditable from adjacent urban land uses. No substantial long-term increase in ambient noise levels is expected to result with implementation of the project. Therefore this impact is ***not significant***. No mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

Development of the 1989 VTM would not substantially increase ambient noise levels in the study area above existing levels. No substantial long-term increase

in ambient noise levels is expected to result. However, residents may be exposed to aircraft overflight that increases the CNEL to 65 dBA. Development under the 1989 VTM would result in greater development impacts than Alternative 1, including generation of additional traffic noise and exposure of more residents to aircraft noise. Additionally, minor noise may be generated by vegetation management activities on the Mountain. However, implementation of mitigation measures outlined in the 1983 EIR and 1989 Addendum (refer to Table 4-1) would reduce this impact to ***not significant***. No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would include continuation of the existing management program. Hand work, mowing, and mechanical clearing may result in minor noise generation, but these impacts would be temporary and sporadic. No substantial long-term increase in ambient noise levels would result. Therefore this impact is ***not significant***. No mitigation is required.

## Effects on Public Health Hazards

The following analysis documents that potential impacts pertaining to public health hazards are not considered significant, because they would not result in any of the subsequent conditions

- For a project located within two miles of a public airport or public use airport, would the project result in a safety hazard.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires.

## Airport Safety Hazard

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

The Northeast Ridge is not located within an airport land use plan nor is it within two miles of an airport. At its nearest point, San Francisco International Airport is approximately 4.5 miles southwest of the project site. The project would not result in an airport-related safety hazard for people residing or working in the project area. Therefore this impact is ***not significant***. No mitigation is required.

#### Management and Monitoring of Conserved Habitat

Prescribed, micro, or pile burns conducted on the Mountain have the potential for smoke interference with aircraft landing or departing from the San Francisco International Airport, located approximately 4.5 miles southwest of the

Mountain. Other management and monitoring would not impair flight patterns or create safety hazards related to the airport. Because of the unlikelihood of this impact and required compliance with CDF and BAAQMD regulations for burning, it is ***not significant***. No mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

The Northeast Ridge is not located within an airport land use plan nor is it within two miles of an airport. Although development under the 1989 VTM would result in more residential units on the Northeast Ridge, the project would not result in an airport-related safety hazard for people residing or working in the project area. Vegetation management activities under the current program would not generate safety hazards. Therefore this impact is ***not significant***. No mitigation is required.

### Alternative 3—No Action

The No Action alternative would include continuation of the existing management program. Vegetation management and monitoring would not impair flight patterns or create safety hazards related to the airport. There would be ***no impact***. No mitigation is required.

## Emergency Response or Evacuation Plan

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

The proposed 2007 VTM includes the removal of an approved road connection (previously referred to as Carter Street) from Silverspot Drive to Guadalupe Canyon Parkway at the northwestern corner of UII-NII. However, a paved EVA road for the UII-NII site would be retained at that location. The paved EVA at the former UII-NI site also would remain, even though this neighborhood would not be further developed. The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore this impact is ***not significant***. No mitigation is required.

#### Management and Monitoring of Conserved Habitat

Hand work conducted by the Habitat Manager has the potential for flaming hazards. Prescribed, micro, and pile burning have the potential to accidentally ignite an urban-interface fire hazard. Ignition of a wildfire could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. However, all burning on the Mountain would require assistance from CDF and/or the local fire departments, a permit from the BAAQMD, and a burn plan approved by CDF. With implementation of these minimization measures, this impact is ***not significant***. No further mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

The proposed 1989 VTM includes a paved EVA road for the UII-NII site and a paved EVA road for the UII-NI site. The 1989 VTM would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Additionally, continuation of the current habitat management and monitoring program would not physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore this impact is ***not significant***. No mitigation is required.

### Alternative 3—No Action

The No Action alternative would include continuation of the existing management program. However, all burning on the Mountain would require assistance from CDF and/or the local fire departments, a permit from the BAAQMD, and a burn plan approved by CDF. With implementation of these minimization measures, this impact is ***not significant***. No further mitigation is required.

## Wildland Fires

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

The project site is adjacent to existing and proposed Conserved Habitat. The proposed 2007 VTM would contribute a total 144.66 acres of Conserved Habitat to the Plan Operator. Construction of 71 new dwelling units adjacent to this open space would expose new residents to wildland fire hazard. However, the proposed changes to the project do not result in an increase of exposure or risk of wildland fires over that were evaluated in the 1983 EIR and 1989 Addendum. All prescribed or pile burning conducted on Conserved Habitat requires assistance from CDF and/or the local fire departments. Additionally, the project design of the buildings would incorporate safety features, such as sprinklers, into the construction plans and site design. Therefore this impact is ***not significant***. No mitigation is required.

#### Management and Monitoring of Conserved Habitat

Hand work conducted by the Habitat Manager has the potential for flaming hazards. Prescribed, micro, and pile burning have the potential to result in wildland fires on the Mountain, particularly if a prescribed burn or pile burn were to escape. However, the Plan Operator would coordinate all burning with CDF and/or local fire departments to minimize wildland fire hazards. With implementation of these minimization measures, this impact is ***not significant***. No further mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

The 1989 VTM would contribute a total 135.73 acres of Conserved Habitat to the Plan Operator. Development of 151 new dwelling units adjacent to this open space would expose new residents to wildland fire hazard. Development under the 1989 VTM would result in greater development impacts than Alternative 1, including exposure of more residents to wildland fire hazards. Additionally, buildup of thatch under the current habitat management program may result in subsequent potential for wildlife hazards (ignition of woody vegetation). Although the adopted HCP minimizes wildland fire hazards through coordination with CDF and/or local fire departments, wildfire risk would be substantially higher with expansion of coastal scrub vegetation. Suppression of the natural fire regime, coupled with buildup of thatch and lack of funding mechanisms to establish control measures, could result in a destructive wildfire in the long-term. This impact is ***significant and unmitigated***. No mitigation is available.

### Alternative 3—No Action

The No Action alternative would include no construction activities. However, if vegetation becomes denser and woody non-native species expand over time under the current management program, wildfire risk would increase (ignition and intensity) compared to the Proposed Action. Although the adopoted HCP minimizes wildland fire hazards through coordination with CDF and/or local fire departments, the potential for uncontrolled wildfire increases. Suppression of the natural fire regime, coupled with buildup of thatch and lack of funding mechanisms to establish control measures, could result in a destructive wildfire in the long-term. This impact is ***significant and unmitigated***. No mitigation is available.

## Effects on Public Services and Utilities

The following analysis documents that potential impacts pertaining to public services and utilities are not considered significant, because they would not result in any of the subsequent conditions

- Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered public services:
  - Fire protection.
  - Police protection.
  - Schools.
  - Parks and recreation.
  - Wastewater treatment.
  - Storm water drainage facilities.
  - Water supplies.

- Landfill.

# Fire Protection

## Alternative 1—Proposed Action

### Reconfiguration of the Northeast Ridge

Since the 1989 Addendum, the Fire Department has relocated to 3445 Bayshore Boulevard at Valley Drive. The 1989 Addendum concluded that the Fire Department's response times are well within the County standard of 6 minutes 59 seconds for emergencies involving Advanced Life Support equipment. Fire protection and emergency response services would be provided to UII-NII from this relocated station. The Northeast Ridge would result in increased demand for emergency services, as well as the short-term impact of an increase in plan checking and inspection workload. However, this potential increase would be reduced from the 1989 VTM due to the removal of UII-NI from development. As such, the Fire Department would need fewer staff to serve the number of Brisbane residents associated with the project. Both the 1983 EIR and 1989 Addendum provided mitigation measures that would still apply to the proposed project (refer to Table 4-1). Therefore this impact is ***not significant***. No mitigation is required.

### Management and Monitoring of Conserved Habitat

Hand work conducted by the Habitat Manager has the potential for flaming hazards. Prescribed, micro, and pile burning have the potential to result in wildland fires on the Mountain, particularly if a prescribed burn or pile burn were to escape. Escaped wildfires would increase demand for fire protection services and withdraw local fire department resources away from urban responses. However, as stated above, all burning on the Mountain would require assistance from CDF and/or the local fire departments, a permit from the BAAQMD, and a burn plan approved by CDF. With implementation of these minimization measures, this impact is ***not significant***. No further mitigation is required.

## Alternative 2—1989 Northeast Ridge Plan

Development under the 1989 VTM would result in 151 new housing units. Fire protection and emergency response services would be provided to these units by the Fire Department's relocated station at 3445 Bayshore Boulevard. As concluded in the 1983 EIR and 1989 Addendum, the Northeast Ridge would result in increased demand for emergency services, as well as the short-term impact of an increase in plan checking and inspection workload. Additionally, buildup of woody vegetation and thatch under the current habitat management program may substantially increase wildfire hazard and subsequent demand for fire protection services. Because of this increased wildfire risk, additional fire protection personnel or equipment may be needed. The adopted HCP requires coordination with CDF and/or local fire departments to reduce this impact to ***not significant***. No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would include continuation of the existing habitat management program. However, buildup of woody vegetation and thatch may increase wildfire hazard and subsequent demand for fire protection services.Because of this increased wildfire risk, additional fire protection personnel or equipment may be needed. The adopted HCP requires coordination with CDF and/or local fire departments to reduce this impact to ***not significant***. No mitigation is required.

## Police Protection

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

Since the 1989 Addendum, the Police Department has relocated to 50 Park Lane. Police protection services would be provided to UII-NII from this relocated station. Increased demand for police protection would be reduced from the 1989 VTM due to the removal of UII-NI from development. As such, the Police Department would need to hire fewer staff to serve the number of Brisbane residents associated with the project. Therefore this impact is ***not significant***. No mitigation is required.

#### Management and Monitoring of Conserved Habitat

Vegetation management activities would have a negligible impact on police protection activities within the study area. Law enforcement personnel may be called out to the Mountain if vandals were to steal or destroy management and monitoring tools, equipment, or supplies. However, this impact is ***not significant***. No mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

Development under the 1989 VTM would result in 151 new housing units. Police protection services would be provided to these units by the relocated station at 50 Park Lane. The 1989 Addendum concluded that the Police Department did not anticipate the need to hire additional staff to serve the increased number of Brisbane residents associated with the project. Because of the increased wildfire risk associated with expansion of coastal scrub, police and emergency response personnel may also be needed for fire response. This impact is ***not significant***. No mitigation is required.

### Alternative 3—No Action

The No Action alternative would include continuation of the existing habitat management program. Because of the increased wildfire risk associated with expansion of coastal scrub, police and emergency response personnel may also be needed for fire response. This impact is ***not significant***. No mitigation is required.

# School Capacity

## Alternative 1—Proposed Action

### Reconfiguration of the Northeast Ridge

Construction of the proposed 2007 VTM would include 71 dwelling units. However, new elementary and intermediate school students generated at buildout would not likely exceed optimum or maximum capacities. As a condition of approval for the 1989 VTM, the applicant donated a 1.7-acre site to BESD for a future elementary school. Construction of the future elementary school would reduce potential impacts to school services. The reduced development proposed under the 2007 VTM would further reduce impacts on local school capacity. Additionally, payment of a school facilities mitigation fee has been deemed by the State legislature (per Government Code §65995(h)) to constitute full and complete mitigation of the impacts of a development project on the provision of adequate school facilities. Based on legislative changes in 1998, the applicant would pay an impact fee of $2.14 per square foot of residential development. Assuming that each house developed in UII-NII has an average footprint of 2,957 square feet, this would result in the impact fee payment of approximately $449,286.00. Due to the reduction in housing units in the 2007 VTM, however, BESD would receive a lower school impact fee payment than under the 1989 VTM. With implementation of these mitigation measures, this impact is ***not significant***. No further mitigation is required.

### Management and Monitoring of Conserved Habitat

Vegetation management and biological monitoring activities would not generate additional demand for school facilities. There would be ***no impact***. No mitigation is necessary.

## Alternative 2—1989 Northeast Ridge Plan

Construction of UII-NI and UII-NII under the 1989 VTM would include 151 dwelling units. The 1989 Addendum estimated that approximately 178 new elementary and intermediate school students would be generated at buildout and would not exceed optimum or maximum capacities. The 1989 Addendum also included donation of a future elementary school site and payment of a school facilities mitigation fee, described above. Although development under the 1989 VTM would result in greater development impacts than Alternative 1, this impact is ***not significant*** due to implementation of mitigation measures.

## Alternative 3—No Action

The No Action alternative would include no new construction. Management activities would continue as under the baseline condition and would not generate additional demand for school facilities. There would be ***no impact***. No mitigation is necessary.

# Parks and Recreation

## Alternative 1—Proposed Action

### Reconfiguration of the Northeast Ridge

Construction of 71 dwelling units in UII-NII would increase demand for parks and recreation. The applicant paid an in-lieu park fee to the BESD and City for construction of a school/park/recreation center site. Under the 2007 VTM, the applicant would dedicate 144.66 acres of Conserved Habitat to San Mateo County as Plan Operator of the San Bruno Mountain HCP. Brookfield Northeast Ridge II LLC has also constructed a neighborhood park and several community buildings that will serve the residents of the Northeast Ridge. A swimming pool, shower area, and offices was constructed at a school district site adjacent to Brisbane Elementary School, and a 1.2-acre parcel on the northeast corner of Old Bayshore and Old County Road was landscaped and improved for usable open space. In addition to these design features and community improvements associated with the overall development, the proposed 2007 VTM includes 8.93 more acres of Conserved Habitat than proposed in the 1989 VTM. Therefore this impact is ***not significant***. No mitigation is required.

### Management and Monitoring of Conserved Habitat

Vegetation management would improve habitat conditions on the Mountain for the covered butterfly species. Continued protection of the endangered butterflies may support visitation to the County and State Parks land. However, habitat management and monitoring activities would not increase demand for parks and recreation. Therefore this impact is ***not significant***. No mitigation is required.

## Alternative 2—1989 Northeast Ridge Plan

Construction of 151 dwelling units would increase demand for parks and recreation. However, as described above, payment of an in-lieu park fee, design features, and community improvements would reduce potential impacts. Additionally, under the 1989 VTM, the applicant would dedicate 135.73 acres of Conserved Habitat to San Mateo County as Plan Operator of the San Bruno Mountain HCP. Development under the 1989 VTM would result in greater development impacts than Alternative 1. However, implementation of identified mitigation measures would reduce this impact to ***not significant***. No mitigation is required.

## Alternative 3—No Action

The No Action alternative would include no construction activities. Management activities – including hand work, herbicide application, and mowing – would continue as under the baseline condition. Therefore, there would be no project-related demand for parks and recreation. There would be ***no impact***. No mitigation is necessary.

# Wastewater Treatment

## Alternative 1—Proposed Action

### Reconfiguration of the Northeast Ridge

The 2007 VTM would not result in construction of new wastewater treatment facilities or exceedances of wastewater treatment standards of the SFBRWQCB. The proposed modifications include changes to the parcel lot configuration and grading plans, and a reduction in the total number of residences. Adequate capacity exists within the City of Brisbane's contract with SFPUC to provide wastewater collection and treatment services to the proposed project. The 1989 Addendum included mitigation measures that would provide for additional facilities to meet the demands of the new population (refer to Table 4-1). Therefore this impact is ***not significant***. No mitigation is required.

### Management and Monitoring of Conserved Habitat

Ongoing management and monitoring activities would not result in the need for additional wastewater treatment capacity or exceedances of wastewater standards. There would be ***no impact***. No mitigation is necessary.

## Alternative 2—1989 Northeast Ridge Plan

The 1989 VTM would not result in construction of new wastewater treatment facilities or exceedences of wastewater treatment standards of the SFBRWQCB. Although development under the 1989 VTM would result in greater development impacts than Alternative 1, wastewater treatment demand would not be adverse. Implementation of the 1989 Addendum mitigation measures (refer to Table 4-1) would reduce this impact to ***not significant***. No mitigation is required.

## Alternative 3—No Action

The No Action alternative would include no new construction. Management activities would continue as under the baseline condition and would not generate additional demand for wastewater treatment. There would be ***no impact***. No mitigation is necessary.

# Storm Water Drainage Facilities

## Alternative 1—Proposed Action

### Reconfiguration of the Northeast Ridge

Conversion of 19.64 acres of undeveloped land for construction of UII-NII and 1.07 acres for infrastructure grading could result in increased surface runoff and associated flooding. However, the 2007 VTM would not require or result in the construction of new storm water drainage facilities or expansion of existing facilities. Surface runoff from 71 dwelling units would be accommodated by existing and planned facilities. The amount of impervious surface area in the new

parcel lot configuration is less than that in the 1989 VTM, resulting in a reduction in overall and peak runoff volumes. The City's downstream storm water drainage infrastructure was designed to accommodate drainage impacts from the 1989 VTM, but would be receiving less surface runoff under the reconfigured plan. The mitigation measures in the 1982 EA/EIR shall continue to be implemented (refer to Table 4-1). Therefore this impact is ***not significant***. No mitigation is required.

#### Management and Monitoring of Conserved Habitat

Ongoing management and monitoring could temporarily increase the rate and/or amount of surface runoff if vegetation removal exposes topsoil and alters infiltration rates. Soil disturbance and associated surface runoff may occur following hand or mechanical clearing, prescribed or micro burns, and minor trampling from livestock grazing. Although increased surface runoff may discharge into nearby storm water drainage facilities, the increase is minor and the impact is ***not significant***. No mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

Conversion of 40.00 acres of undeveloped land for construction of residential development would result in increased surface runoff and potential for flooding. Development under the 1989 VTM would result in greater development impacts than Alternative 1, including greater surface runoff volumes and associated demand for storm drainage facilities. However, implementation of the mitigation measures outlined in the 1983 EIR and 1989 Addendum (refer to Table 4-1) would reduce this impact to ***not significant***. No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would include no construction activities. There would be no change in land use, site drainage, or other features or processes that control the quality and quantity of surface water runoff. Management activities would continue as under the baseline condition. There would be ***no impact***. No mitigation is necessary.

## Water Supplies

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

The 2007 VTM includes modifications to the circulation layout, parcel lot configuration, and grading plan for the UII-NII neighborhood, and foregoes construction of additional homes at UII-NI. Although this development would generate new demand for water supplies, it would not require construction of new water treatment facilities. Based on the implementation of the mitigation measures outlined in the 1983 EIR and 1989 Addendum (refer to Table 4-1), no new or expanded entitlements would be required and there would be sufficient water supplies available to serve the project from existing entitlements and

resources. Therefore this impact is ***not significant***. No further mitigation is required.

#### Management and Monitoring of Conserved Habitat

Ongoing management and monitoring activities – namely replanting and restoration – may result in short-term demand for water supplies as newly planted species are irrigated. Irrigation is generally conducted for only the first few seasons, in order to establish the plant's root bed. As such, water demand for restoration activities would be temporary and periodic. Therefore this impact is ***not significant***. No mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

Development under the 1989 VTM would include 151 dwelling units in two neighborhoods, which would generate new demand for water supplies. Although this is greater demand than Alternative 1, the 1989 Addendum concluded that no new or expanded entitlements would be required and there would be sufficient water supplies available to serve the project from existing entitlements and resources. Implementation of mitigation measures outlined in the 1983 EIR and 1989 Addendum (refer to Table 4-1) would reduce this impact to ***not significant***. No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would include no new construction. Management activities would continue as under the baseline condition and would not generate additional demand for water supply. There would be ***no impact***. No mitigation is necessary.

## Sufficient Landfill Capacity

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

Construction of 71 dwelling units would generate demand for garbage and recycling services. However, no significant impact related to landfill capacity limitation is anticipated due to construction of the Northeast Ridge development. Therefore this impact is ***not significant***. No mitigation is required.

#### Management and Monitoring of Conserved Habitat

Ongoing management and monitoring activities would not result in the need for additional landfill capacity. There would be ***no impact***. No mitigation is necessary.

### Alternative 2—1989 Northeast Ridge Plan

Construction of 151 new dwelling units would generate greater demand for garbage and recycling services than under the reconfigured 2007 VTM.

However, no significant impact related to landfill capacity limitation is anticipated due to construction of the Northeast Ridge development. Therefore this impact is ***not significant***. No mitigation is required.

### Alternative 3—No Action

The No Action alternative would include no new construction. Management activities would continue as under the baseline condition and would not generate additional demand for landfill capacity. There would be ***no impact***. No mitigation is necessary.

# Effects on Transportation

The following analysis documents that potential impacts pertaining to transportation are not considered significant, because they would not result in any of the subsequent conditions

- Cause an increase in traffic which is substantial in relation to the existing traffic volumes and capacity of the street system.
- Exceed, either individually or cumulatively, a level of service standard.
- Substantially increase hazards due to a design feature.
- Result in inadequate parking capacity.
- Conflict with adopted polices, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

## Traffic Volumes

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

The 2003 Traffic and Circulation Technical Analysis was conducted to determine circulation system performance with the addition of traffic from the 2007 VTM to existing traffic volumes. All study area intersections are projected to operate at satisfactory levels of service under the Existing plus Project conditions. Therefore, this impact is ***not significant***. No mitigation is required.

#### Management and Monitoring of Conserved Habitat

Vegetation management and biological monitoring activities are not anticipated to have a substantial effect on area traffic volumes. Trip generation for maintenance activities would be minimal. Therefore this impact is ***not significant***. No mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

A traffic study for the 1989 VTM found that traffic volumes in the project vicinity were higher than reported in the 1983 EIR, and that cumulative traffic volumes would be greater than originally predicted. Development under the 1989 VTM would result in greater traffic generation impacts than Alternative 1 due to the increased number of housing units. Additionally, vegetation management and maintenance activities would generate negligible traffic volumes. With implementation of the mitigation measures identified in the 1983 EIR and 1989 Addendum, this impact would be ***not significant***. No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would include continuation of the current management program. Vegetation management and maintenance activities would generate negligible traffic volumes. Therefore this impact is ***not significant***. No mitigation is required.

## Exceed Level of Service Standard

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

The 2003 Traffic and Circulation Technical Analysis was conducted to determine circulation system performance with the addition of traffic from the 2007 VTM to existing traffic volumes. Bayshore Boulevard is a designated CMP facility on the C/CAG network. Under both the Existing plus Project and Cumulative conditions, the Bayshore Boulevard/Guadalupe Canyon Parkway intersection and the Bayshore Boulevard/Valley Drive intersection would operate at acceptable levels of service (at or above LOS C). Therefore, this impact is ***not significant***. No mitigation is required.

#### Management and Monitoring of Conserved Habitat

As stated above, vegetation management and biological monitoring activities are not anticipated to have a substantial effect on area traffic volumes. Trip generation for maintenance activities would not impact LOS. Therefore this impact is ***not significant***. No mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

A traffic study for the 1989 VTM found that traffic volumes in the project vicinity were higher than reported in the 1983 EIR, and that cumulative traffic volumes would be greater than originally predicted. Development under the 1989 VTM would result in greater traffic generation impacts than Alternative 1 due to the increased number of housing units. Additionally, vegetation management and maintenance activities would generate negligible traffic volumes. With implementation of the mitigation measures identified in the 1983 EIR and 1989

Addendum, this impact would be ***not significant.*** No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would include continuation of the current management program. Vegetation management and maintenance activities would generate negligible traffic volumes. Therefore this impact is ***not significant***. No mitigation is required.

## Traffic Hazards Due to a Design Feature

### Alternative 1—Proposed Action

#### Reconfiguration of the Northeast Ridge

The 2003 Traffic and Circulation Technical Analysis identified intersection deficiencies for the northbound left turn lanes and queue lengths for the Bayshore Boulevard/Guadalupe Canyon Parkway and Bayshore Boulevard/Valley Drive intersections. Recommended improvements to correct these deficiencies, including the addition of a second northbound left turn pocket at the Bayshore Boulevard/Valley Drive intersection and lengthening the left turn pocket to provide at least 300 feet of queuing space, have been implemented and were included in the existing conditions for this traffic study. No new impacts were identified for traffic and circulation issues associated with the proposed 2007 VTM. Therefore this impact is ***not significant***. No further mitigation is required.

#### Management and Monitoring of Conserved Habitat

Habitat management and monitoring activities would not result in traffic hazards or construction of new design features. There would be ***no impact***. No mitigation is necessary.

### Alternative 2—1989 Northeast Ridge Plan

The 1989 Addendum identified intersection deficiencies and potential subsequent traffic hazards for the North Hill Drive/Guadalupe Canyon Parkway intersection. These improvements have been implemented and were included in the existing conditions for the 2003 traffic study. Implementation of the mitigation measures identified in the 1983 EIR and 1989 Addendum would reduce this impact to ***not significant.*** No further mitigation is required.

### Alternative 3—No Action

The No Action alternative would include continuation of the current management program. Vegetation management and maintenance activities would not generate traffic hazards. There would be ***no impact***. No mitigation is necessary.

# Inadequate Parking Capacity

## Alternative 1—Proposed Action

### Reconfiguration of the Northeast Ridge

The 1989 Addendum concluded that the Northeast Ridge would provide 5.4 parking spaces per unit or 5.7 parking spaces per unit, based on the double-loaded street option or the single-loaded street option, respectively. The City of Brisbane required a parking standard of 2.5 spaces per unit in each neighborhood as a condition of the Planned Development Permit. Construction of the 71 housing units in the 2007 VTM would conform by these standards, including construction of two-car garages for each unit. Additionally, mitigation measures outlined in the 1989 Addendum required the development of a parking management program and the prohibition of parking of recreational vehicles, boats, trailers, etc. in the project. These mitigation measures would still apply (refer to Table 4-1). Therefore this impact is ***not significant***. No further mitigation is required.

### Management and Monitoring of Conserved Habitat

Ongoing management and monitoring activities are not anticipated to have an effect on parking capacity on the Mountain. Parking needs for maintenance activities can be accommodated by existing facilities. Therefore this impact is ***not significant***. No mitigation is required.

## Alternative 2—1989 Northeast Ridge Plan

As described above, the City of Brisbane standards would be met during construction of the 151 dwelling units under the 1989 VTM. Additionally, vegetation management and maintenance activities would generate negligible demand for parking facilities. Implementation of mitigation measures outlined in the 1989 Addendum (refer to Table 4-1) would reduce this impact to ***not significant***. No further mitigation is required.

## Alternative 3—No Action

The No Action alternative would include continuation of the current management program. Vegetation management and maintenance activities would generate negligible demand for parking facilities. Therefore this impact is ***not significant***. No mitigation is required.

# Alternative Transportation

## Alternative 1—Proposed Action

### Reconfiguration of the Northeast Ridge

Implementation of the 2007 VTM would not conflict with adopted policies, plans, or programs supporting alternative transportation. New residences

occupying UII-NII would have access to the Mountain's extensive trail system. Additionally, mitigation measures outlined in the 1983 EIR and 1989 Addendum were proposed to minimize and decrease automobile use. These mitigation measures would still apply (refer to Table 4-1). Therefore this impact is ***not significant***. No mitigation is required.

#### Management and Monitoring of Conserved Habitat

Ongoing vegetation management activities would not conflict with adopted policies, plans, or programs supporting alternative transportation. Prescribed or micro burning might temporarily preclude use of portions of the Mountain's trail system for alternative transportation. However, this impact is ***not significant***. No mitigation is required.

### Alternative 2—1989 Northeast Ridge Plan

Implementation of the 1989 VTM would not conflict with adopted policies, plans, or programs supporting alternative transportation. Vegetation management and maintenance activities would not preclude use of the trail system for alternative transportation. Mitigation measures outlined in the 1983 EIR and 1989 Addendum were proposed to minimize and decrease automobile use. Implementation of these mitigation measures would reduce this impact to ***not significant***. No mitigation is required.

### Alternative 3—No Action

The No Action alternative would include continuation of the current management program. Vegetation management and maintenance activities would not preclude use of the trail system for alternative transportation. Therefore this impact is ***not significant***. No mitigation is required.

## Effects on Population and Socioeconomic Conditions

The following analysis documents that potential impacts pertaining to population and socioeconomic conditions are not considered significant, because they would not result in any of the subsequent conditions.

- Induce substantial population growth in an area.
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.
- Significant effects on employment, industry or commerce within the project vicinity.
- Potential disproportional impacts to low income or minority communities within the project vicinity.

# Substantial Population Growth

## Alternative 1—Proposed Action

### Reconfiguration of the Northeast Ridge

The 2007 VTM would result in the construction of 71 new dwelling units. This development is anticipated in planning projections for the City of Brisbane, included in the 1982 HCP as a "Planned parcel", and accounted for in the ABAG's regional growth projections. Population growth was previously addressed in the 1983 EIR and 1989 Addendum; implementation of the proposed 2007 VTM would reduce potential direct and indirect impacts resulting from the increased population. This project would not result in substantial population growth. Therefore this impact is ***not significant***. No mitigation is required.

### Management and Monitoring of Conserved Habitat

Vegetation management and biological monitoring would not induce population growth on the Mountain. There would be ***no impact***. No mitigation is necessary.

## Alternative 2—1989 Northeast Ridge Plan

The 1989 VTM would result in the construction of 151 new dwelling units. Development under the 1989 VTM would result in greater development impacts than Alternative 1, due to an additional 97 units. Population growth was previously addressed in the 1983 EIR and 1989 Addendum and found to be consistent with City of Brisbane planning. Therefore this impact is ***not significant***. No mitigation is required.

## Alternative 3—No Action

The No Action alternative would include continuation of the existing vegetation management program. There would be ***no impact*** on the local socioeconomic setting. No mitigation is necessary.

# Displace Existing Housing

The project site is currently undeveloped. No displacement of existing housing would occur under the development alternatives or during vegetation management and monitoring activities. There would be ***no impact*** under any alternative. No mitigation is necessary.

# Effects on Employment, Industry, or Commerce

## Alternative 1—Proposed Action

### Reconfiguration of the Northeast Ridge

The proposed Northeast Ridge development would not permanently change the conditions that affect individual businesses or the local economic climate (land use, transportation systems, customer base, etc.). Demand for construction employment would increase during grading, site preparation, infrastructure installation, slope stabilization, and housing construction phases. However, this demand would be temporary. Therefore this impact is ***not significant***. No mitigation is required.

### Management and Monitoring of Conserved Habitat

Vegetation management would have few potential effects on economic conditions within the study area. Establishment of the endowment, however, would improve the economic conditions of the Plan Operator, as significantly more funding would be available annually for implementation of vegetation management and monitoring activities. The Habitat Manager may hire additional field and/or biological staff to implement the expanded management program. The 1982 EA/EIR mitigation measures shall continue to be implemented on the Mountain (refer to Table 4-1). This impact is ***not significant***. No mitigation is required.

## Alternative 2—1989 Northeast Ridge Plan

As described above, demand for construction employment would increase during grading, site preparation, utility installation, and housing construction phases. However, this demand would be temporary. Therefore this impact is ***not significant***. No mitigation is required.

## Alternative 3—No Action

The No Action alternative would include continuation of the existing vegetation management program. There would be ***no impact*** on local employment, industry, or commerce. No mitigation is required.

# Disadvantaged Communities

## Alternative 1—Proposed Action

### Reconfiguration of the Northeast Ridge

The 2007 VTM would contribute to meeting the City of Brisbane's residential development needs. Although it would not likely provide housing affordable to disadvantaged communities, it is not expected to be an impediment to meeting regional housing needs. There would be no adverse impacts to disadvantaged populations. Therefore this impact is ***not significant***. No mitigation is required.

### Management and Monitoring of Conserved Habitat

Minority and low-income populations are found throughout San Mateo County, but the vegetation management and monitoring activities associated with the Proposed Action would not result in disproportionately high or significant effects on these populations. There would be ***no impact***. No mitigation is necessary.

## Alternative 2—1989 Northeast Ridge Plan

The 1989 VTM would contribute to meeting the City of Brisbane's residential development needs. Although it would not likely provide housing affordable to disadvantaged communities, it is not expected to be an impediment to meeting regional housing needs. There would be no adverse impacts to disadvantaged populations. Therefore this impact is ***not significant***. No mitigation is required.

## Alternative 3—No Action

The No Action alternative would include continuation of the existing vegetation management program. There would be ***no impact*** on disadvantaged communities. No mitigation is required.

**Table 4-1.** San Bruno Mountain Habitat Conservation Plan Environmental Mitigation Summary 

| Impact | Mitigation Measure |
|---|---|
| **1982 San Bruno Mountain HCP EIR/EA** | |
| ***Biology*** | |
| Habitat remaining in the development parcel after construction will be subject to future threats. | Require that open space within a development or other parcel, which becomes conserved habitat, must be dedicated to the Plan Operator, or a habitat easement given, This measure will cause the addition of almost 800 acres to public ownership (2/3 of existing grassland). |
| The activities needed to protect the species of concern cannot be guaranteed without a permanent funding source. | Create a Habitat Conservation Trust Fund. The Fund will provide the long term necessary capital for continued research and monitoring of the species populations, as well as management of brush and exotic species encroachment, enhancement of currently low quality habitat, and control of illegal uses on the Mountain which, in the past, have proved to be detrimental to the Mountain's ecology. |
| Uncontrolled development proposed on the Mountain will maximize the impacts on the species of concern. | Specify a careful and strict pre-development process, which will minimize the impacts on the species of concern. |
| Uncontrolled actions by future residents may impact the adjacent conserved habitat. | Require that future residents comply with a set of restrictions regarding adjacent conserved habitat. |
| Changes in the proposed projects described in Vol. 2 of the HCP, after the HCP is approved, could cause adverse impacts on the conserved habitat. | Any modification to the development described in Vol. 2 of the HCP, which may affect the conserved habitat, or any future proposed development not identified in the HCP, must go through a very strict approval process (See Ch. 1). |
| The enhancement activities described in the HCP could inadvertently impact other plants and animals on the Mountain. | Assess impacts in other plants and animals from the brush removal program or any other habitat enhancement technique before any treatment takes place. This should reduce the chance of inadvertent damage to other species, which may warrant preservation. |
| Mass grading of development will cause large losses of the Mission Blue and Callippe Silverspot to take place in a short period of time. | Phase grading of development areas to reduce the number of insects lost in one given year. |

**Table 4-1.** San Bruno Mountain Habitat Conservation Plan Environmental Mitigation Summary 

| Impact | Mitigation Measure |
|---|---|
| ***Economics*** | |
| The funding provided for in the Plan will only meet the basic provisions of the Plan. | In order to increase the funding level proposed in the Plan, require assessments on land uses other than residential.<br>Include a provision that unplanned parcels, should they be developed, be required to add to the assessment fund.<br>Facilitate the Plan to act as a clearing house for outside researchers. The Plan operator can coordinate research activities, and publicize the availability if research topics found on the Mountain. |
| ***Cultural Resources*** | |
| Enhancement activities may impact hidden resources. | If any cultural resources are found during the implementation of any HCP related activities, cease the activities until the resources are assessed. |
| ***Geology, Soils, Hydrology*** | |
| Enhancement activities may cause increased erosion. | Incorporate erosion control measures into any HCP activities which may increase erosion potential. |
| ***Climate and Air Quality*** | |
| Burning activities mentioned for brush and exotic species control may have an impact on local or regional air quality. | Minimize air quality impacts from controlled burning by proper fuel preparation and limiting the burn to “burn days” as required by the BAAQMD. |
| **1982 Northeast Ridge Development EIR** | |
| ***Biology*** | |
| Development will result in permanent loss of 100 acres of open space on the Northeast Ridge. Grading will mean reducing the habitat of endangered Mission Blue butterfly by 5.6% and the Callippe Silverspot habitat by 4.6%, along with the habitat of several other plants and animals, and reducing the amount of remaining open space of the north San Francisco peninsula. In addition the overall development on the Mountain may result in a decrease in the existing levels of raptor utilization. | Developer/owner participation in the HCP. |
| Habitat remaining in the development parcel after construction will be subject to future threats. | Require that conserved habitat within the development parcel be either dedicated to the HCP operator or given as a habitat easement |

**Table 4-1.** San Bruno Mountain Habitat Conservation Plan Environmental Mitigation Summary 

| Impact | Mitigation Measure |
|---|---|
| Large eucalyptus trees currently established on the site which support nesting sites for many birds may be removed for construction of the neighborhoods | Assure that Eucalyptus trees on other portions of the Mountain are conserved and managed so that they can provide nesting sites and habitat for birds displaced by the development |
| Two species of rodents on San Bruno Mountain are known to carry fleas harboring Sylvatic Plague. No Human causes arte known from this source. | Consult with San Mateo County Health Dept. of Public Health to determine what measures are needed to eliminate the problem, then carry out those measures. |
| ***Socioeconomics*** | |
| Project will comprise some high-cost housing not affordable by low to moderate income families | Developer, City and County could explore subsidy options to allow provision of up to 250 low/moderate income units |
| New residents may not patronize commercial areas of Brisbane because it does not now provide diversity of goods, convenience parking or ambience they desire | City of Brisbane could augment public parking in downtown Brisbane |
| ***Aesthetics*** | |
| Project will cause structures to be built on 2 prominent hilltops; portions of structures will be visible from Brisbane and other nearby areas | Minimize visual impact via design review; specify criteria to minimize development's bulk, texture and color to relieve visual impact |
| ***Traffic*** | |
| Increased traffic will burden the North Hill Drive/Guadalupe Canyon Parkway intersection, increasing the likelihood of traffic conflicts | Provide a signalized intersection |
| ***Public Services*** | |
| The current elementary school capacity is too small to assume the projected number of students. | Eventual construction of a new elementary school, estimated to occur near the completion of the entire project. |
| ***Geology and Soils*** | |
| Project grading and alteration of drainage patterns will increase the potential for erosion | Carefully and properly design and construct cut-and-fill slopes, provide graded areas protection from the effects of ORV traffic and heavy rainfall. |
| Project may be severely damaged by a major earthquake | Implement design measures which will decrease the chances of structure and slope failure during a major earthquake |

| Impact | Mitigation Measure |
|---|---|
| ***Hydrology*** | |
| Increased water runoff resulting in excessive siltation of the Brisbane Lagoon, and plugging and flooding of the substandard storm drain system in the Crocker Industrial Park. | During project construction, install temporary catchement basins and sediment traps where appropriate; project design should include the construction of permanent sediment traps.<br>Installation of tide gates at the Brisbane Lagoon can reduce flooding problems during the storm season. |
| High water table and seep areas are an unstable substrate for structures. | Avoid these areas in design; install drains, provide subdrainage where necessary. |
| ***Air Quality*** | |
| Impacts from increased vehicle traffic will have the single most long-lasting impact to area air quality. | Promote decreased use of autos; provide bicycle and pedestrian paths onsite and between the project and nearby commercial areas; provide convenient access to public transit. Provide a connection with the proposed Bay to Ocean Trail. |
| ***Energy Use*** | |
| Project will increase energy use in the area; most important impacts will be on oil-dependent energy sources. | Incorporate energy conservation measures into project and building design; orient structures for maximum solar and minimum wind exposure. |
| ***Noise*** | |
| Infrequent and high intensity aircraft noise will disturb residents | Promote noise reduction in structure design, e.g. sound-rated windows, acoustically rated walls and ceilings. |
| **1989 Northeast Ridge Development EIR Addendum (Added mitigation measures only)** | |
| The 1989 project configuration reduces the amount of conserved habitat in the northwest portion of the project thus reducing the butterfly dispersal corridor there. | Request that the HCP Plan Operator thin the Eucalyptus trees found growing along Guadalupe Cyn. Pkwy. west of the project site to enhance the butterfly dispersal corridor there. |
| The thick grove of Eucalyptus trees located in conserved habitat is not considered habitat for native species. | Thin and manage the Eucalyptus grove and eliminate sick or weak trees which could fall in the development area. The Plan Operator will manage the trees in conserved habitat on an ongoing basis. |
| ***Socioeconomics*** | |
| Project will produce some high cost housing not affordable by low to moderate income families. | The City of Brisbane has applied to the County of San Mateo for inclusion in the Mortgage Credit Certificate Program. |

**Table 4-1.** San Bruno Mountain Habitat Conservation Plan Environmental Mitigation Summary 

| Impact | Mitigation Measure |
|---|---|
| ***Transportation/Circulation*** | |
| Increased traffic will burden the North Hill Drive/ Guadalupe Canyon Parkway intersection, increasing the likelihood of traffic conflicts. | Construct an eastbound left-turn pocket and extend the existing westbound turn pocket at this intersection. |
| ***Noise*** | |
| The future project residents may be affected by quarry night hauling if the existing night haul route continues to be used after project construction. | Reroute nighttime quarry truck traffic away from the Northeast Ridge project site, e.g. have the trucks use Valley Drive to Bayshore instead of North Hill. |

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**Table 4-2.** Summary of Significance Conclusions for All Alternatives



| Impact | Alternative 1 – Proposed Action | Alternative 2 – 1989 Northeast Ridge Plan | Alternative 3 – No Action |
|---|---|---|---|
| **Effects on Visual Resources** | | | |
| Changes in Scenic Vista | Not significant | Not significant | Not significant |
| Existing Visual Character | Not significant | Not significant | Not significant |
| Substantial Light or Glare | Not significant | Not significant | No impact |
| **Effects on Air Quality** | | | |
| Applicable Air Quality Plan | Not significant | Not significant | Not significant |
| Air Quality Standard Violation | Not significant | Not significant | Not significant |
| Expose Sensitive Receptors | Not significant | Not significant | Not significant |
| **Effects on Geology, Seismicity, and Soils** | | | |
| Earthquake Fault | No impact | No impact | No impact |
| Seismic Ground Shaking | Not significant | Not significant | Not significant |
| Seismic-Related Ground Failure, Including Liquefaction | Not significant | Not significant | Not significant |
| Landslide Hazards | Not significant | Not significant | Not significant |
| Substantial Soil Erosion | Not significant | Not significant | Not significant |
| Expansive Soil | Not significant | Not significant | No impact |
| Known Mineral Resources | No impact | No impact | No impact |
| **Effects on Hydrology and Water Quality** | | | |
| Substantially Deplete Groundwater Supplies | Not significant | Not significant | No impact |
| Substantial Erosion or Siltation | Not significant | Not significant | Not significant |
| Rate or Amount of Surface Runoff | Not significant | Not significant | Not significant |

**Table 4-2.** Summary of Significance Conclusions for All Alternatives



| Impact | Alternative 1 – Proposed Action | Alternative 2 – 1989 Northeast Ridge Plan | Alternative 3 – No Action |
|---|---|---|---|
| Degrade Water Quality | Not significant | Not significant | Not significant |
| 100-Year Flood Hazard Area | Not significant | Not significant | Not significant |
| **Effects on Hazardous Materials** | | | |
| Transport, Use, or Disposal of Hazardous Materials | Not significant | Not significant | Not significant |
| Emit Hazardous Emissions or Handle Hazardous Materials | Not significant | Not significant | Not significant |
| **Effects on Vegetation Communities** | | | |
| Loss of Native Grassland Habitat | Not significant and beneficial | Significant and unmitigated | Significant and unmitigated |
| Spread of Non-Native Species | Not significant and beneficial | Significant and unmitigated | Significant and unmitigated |
| Special Status Plants | Not significant and beneficial | Significant and unmitigated | Significant and unmitigated |
| **Effects on Callippe Silverspot Butterfly** | | | |
| Loss of Viola Habitat | Not significant and beneficial (Mitigation Measure 1) | Significant and unmitigated | Significant and unmitigated |
| Loss of Hilltopping Habitat | Not significant and beneficial | Significant and unmitigated | Significant and unmitigated |
| Barrier to Movement | Not significant and beneficial | Significant and unmitigated | Significant and unmitigated |
| Habitat Fragmentation | Not significant and beneficial | Significant and unmitigated | Not significant |
| Disturbance to Individuals (Harassment) | Not significant | Not significant | No impact |
| **Effects on Bay Checkerspot Butterfly** | | | |
| Loss of Critical Habitat | Not significant | Significant and unmitigated | Significant and unmitigated |
| **Effects on Other Listed Species** | | | |
| Other Special Status Butterflies | Not significant and beneficial | Significant and unmitigated | Significant and unmitigated |

**Table 4-2.** Summary of Significance Conclusions for All Alternatives



| Impact | Alternative 1 – Proposed Action | Alternative 2 – 1989 Northeast Ridge Plan | Alternative 3 – No Action |
|---|---|---|---|
| Special Status Amphibians | No impact | No impact | No impact |
| Special Status Birds | Not significant (Mitigation Measure 2) | Not significant | Not significant |
| **Effects on Cultural Resources** | | | |
| Historical Resources | Not significant | Not significant | Not significant |
| Archaeological Resources | Not significant | Not significant | Not significant |
| Paleontological Resources | Not significant | Not significant | Not significant |
| **Effects on Land Use** | | | |
| Physically Divide a Community | Not significant | Not significant | No impact |
| Conflict with Land Use Plan, Policy, or Regulation | Not significant | Not significant | No impact |
| Conflict with Habitat Conservation Plan | Beneficial | No impact | No impact |
| Incompatibility with Adjacent Land Uses | Not significant | Not significant | Not significant |
| **Effects on Noise** | | | |
| Excessive Noise Levels | Not significant | Not significant | Not significant |
| Excessive Ground Borne Vibration | Not significant | Not significant | No impact |
| Permanent Increase in Ambient Noise Levels | Not significant | Not significant | Not significant |
| **Effects on Public Health Hazards** | | | |
| Airport Safety Hazard | Not significant | Not significant | No impact |
| Emergency Response or Evacuation Plan | Not significant | Not significant | Not significant |
| Wildland Fires | Not significant | Significant and unmitigated | Significant and unmitigated |

**Table 4-2.** Summary of Significance Conclusions for All Alternatives



| Impact | Alternative 1 – Proposed Action | Alternative 2 – 1989 Northeast Ridge Plan | Alternative 3 – No Action |
|---|---|---|---|
| **Effects on Public Services and Utilities** | | | |
| Fire Protection | Not significant | Not significant | Not significant |
| Police Protection | Not significant | Not significant | Not significant |
| School Capacity | Not significant | Not significant | No impact |
| Parks and Recreation | Not significant | Not significant | No impact |
| Wastewater Treatment | Not significant | Not significant | No impact |
| Storm Water Drainage Facilities | Not significant | Not significant | No impact |
| Water Supplies | Not significant | Not significant | No impact |
| Sufficient Landfill Capacity | Not significant | Not significant | No impact |
| **Effects on Transportation** | | | |
| Traffic Volumes | Not significant | Not significant | Not significant |
| Exceed Level of Service Standard | Not significant | Not significant | Not significant |
| Traffic Hazards Due to a Design Feature | Not significant | Not significant | No impact |
| Inadequate Parking Capacity | Not significant | Not significant | Not significant |
| Alternative Transportation | Not significant | Not significant | Not significant |
| **Effects on Population and Socioeconomic Conditions** | | | |
| Substantial Population Growth | Not significant | Not significant | No impact |
| Displace Existing Housing | No impact | No impact | No impact |
| Effects on Employment, Industry, or Commerce | Not significant | Not significant | No impact |
| Disadvantaged Communities | Not significant | Not significant | No impact |

Chapter 5

# Other Required Analysis

## 5.1 Unavoidable Adverse Impacts

Implementation of the Proposed Action (issuance of an amendment to an existing Section 10 ITP for activities covered by a proposed amendment to the San Bruno Mountain HCP) would not result in any unavoidable adverse impacts on the physical, biological, or social and economic environment.

## 5.2 Irreversible and Irretrievable Commitments of Resources

### Proposed Action

#### Reconfiguration of the Northeast Ridge

Construction of the proposed Northeast Ridge housing development would require a one-time irretrievable commitment of resources in the form of construction materials such as wood and wood byproducts (renewable), plastics (nonrenewable), metals (nonrenewable), and mineral products such as concrete and plaster (nonrenewable). It would also require an irretrievable commitment of nonrenewable petroleum resources to support operation of heavy equipment, and electricity to power hand tools and provide lighting for interior finish work. In addition, conversion of undeveloped land to residential use is considered an irretrievable commitment of that land, in that the likelihood of the land being available for open space, habitat, or agricultural uses in any meaningful timeframe is so remote and to be considered highly improbable. Occupation of the proposed development would require a further commitment of wood, petroleum, metals, and other resources needed for the production of furnishings. Electrical power would also be consumed as a result of project occupancy.

### Management and Monitoring of Conserved Habitat

Vegetation management and maintenance would require small, ongoing commitments of electricity, fuels and lubricants, herbicides, planting materials and mulch, and water.

## Short-Term Uses versus Long-Term Productivity

The project would include the development of land for residential use in the long-term balanced by increased funding for habitat management across the Mountain in the long-term. The proposed project is intended to provide long-term management for the callippe silverspot and bay checkerspot through an increased level of protection of lands that presently support these species, or could support them in the future if appropriately managed. Short-term uses related to construction activities are not expected to result in major adverse effects on these species, and mitigation measures implemented during construction (see above) would further reduce these potential effects.

Long-term productivity of the species would be increased though habitat preservation, management, and enhancement. The long-term loss of grassland habitat that would result from project implementation in the UII-NII area would affect only low quality habitat that is marginally useful to the plan species and is relatively unimportant in the context of potential habitat in the surrounding area.

# 5.3 Cumulative Effects

The CEQs NEPA regulations (40 CFR 1580.25) require a reasonable analysis of the significant cumulative impacts of a proposed project. *Cumulative impacts* refers to “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.”

There are two approaches to identifying cumulative projects and the associated impacts. The *list* approach identifies individual projects in order to identify potential cumulative impacts. The *projection* approach uses a summary of projections in an adopted general plan or related planning document to identify potential cumulative impacts. This EA uses the projection approach, based on authorized development under the adopted HCP.

## Biological Resources

The conservation program of the adopted HCP inherently mitigates the cumulative impacts of authorized development to Species of Concern and their associated habitats. The Proposed Action also provides assurance that listed species and habitat would be conserved and recovered, and therefore would not result in a significant contribution to a cumulative impact.

Non-Federal activities continue to eliminate habitat for the callippe silverspot, San Bruno elfin, mission blue, and bay checkerspot butterflies in the study area. Loss and degradation of habitat affecting both animals and plants with or without Service authorization continues as a result of urbanization and roadway and utility right-of-way management (USFWS 2006). Existing habitat for these species is so fragmented that extirpation of certain remaining populations is of significant concern, due to chance fluctuation of small populations, unusual climatic events, and loss of genetic fitness commonly. The cumulative effects of these threats pose a significant impediment to the survival and recovery of these species (USFWS 2006).

Deposition of nitrogen from air pollution also presents a significant threat to California grasslands. Invasive species are often better competitors for soil nutrients than native plants. The result of high nitrogen deposition for the callippe silverspot, mission blue, San Bruno elfin, and bay checkerspot butterflies are a possible accelerated invasion of weedy grass and herb species that displace native host plants and nectar sources (USFWS 2006).

Ongoing climate change threatens the phenological relationship between the callippe silverspot, mission blue, San Bruno elfin, and bay checkerspot butterflies, their developmental stages, and the resources necessary for their survival. Since climate change threatens to disrupt annual weather patterns, it may result in a timing mismatch between the butterflies, their nectar sources, and larval food plants. Where populations are isolated, a changing climate may result in local extinction, with range shifts precluded by lack of habitat (USFWS 2006).

The Proposed Action may contribute slightly to these cumulative biological resources impacts during residential development and vegetation management. However, supplementary funding provided by Brookfield Northeast Ridge II LLC would enhance vegetation management and viola habitat on the Mountain. These measures would reduce this impact such that the effect of the overall conservation program would be a beneficial cumulative impact to special-status species.

# All Other Impact Areas

The following provides a discussion of cumulative effects by resource.

- **Visual Resources.** The Proposed Action would not contribute to adverse effects on scenic vistas or the existing visual character because the majority of the existing residential development has already been constructed in the vicinity, and the resulting urbanization of undeveloped land and diminished views of open space in this portion of Brisbane would be minimal. Although it may have a minor effect on light and glare due to the increase of homes, the overall dwelling unit count within the entire Northeast Ridge would decrease by 97 units compared to the 1989 VTM. This results in a reduced cumulative contribution as compared to authorized development.

Management and monitoring activities maybe impact visual character through periodic hand work, herbicide application, mechanical clearing, and possible dying patches of vegetation. However, these activities would be temporary and irregular and would not contribute to a cumulative effect.

- **Air Quality and Climate.** The Proposed Action would potentially generate temporary emissions from construction and from prescribed burns. Construction projects that temporarily emit precursors of ozone are accommodated in the emission inventories of state and federally required air plans and thus would not have a significant cumulative impact on the attainment and maintenance of ozone standards. Additionally, reconfiguration of the Northeast Ridge proposes 97 fewer housing units than the 1989 VTM and would result in less vehicular traffic. The project would would reduce the cumulative contribution to air quality violations as compared to authorized development. However, the Proposed Action may result in GHG emissions from construction and new commuter vehicles that may contribute to global climate change.

  Management and monitoring activities would comply with all regulations in relation to open burning, jurisdictional authority, timing of burns, and smoke management plans. Electric or gas-powered equipment for vegetation management may also result in minor emissions. However, would be used temporarily and sporadic and would not violate any air quality standards. There would not be a significant contribution to a cumulative effect.

- **Geology, Soils, and Seismicity.** The Proposed Action would not expose new residents or structures to seismic hazards. New structures developed on the project site would be designed and constructed in compliance with the California State Building Code (CSBC) and local building codes. Development of the Northeast Ridge may result in soil erosion or exposure to expansive soils during grading, but these impacts would be temporary. There would not be a significant contribution to a cumulative effect.

  Management and monitoring activities may potentially cause temporary soil erosion through disturbance of topsoil during vegetation management. With implementation of mitigation measures impacts would be minimal. Therefore, the project's cumulative contribution is considered not significant.

- **Hydrology and Water Quality.** The Proposed Action has the potential to impact water quality from erosion/sedimentation, herbicide application, and fuel spills associated with residential construction. The Proposed Action would involve substantial grading which would alter the existing on-site drainage pattern and potentially increase sedimentation and downstream flooding conditions during the 10-year storm conditions. However, surface runoff under the proposed project would be less than the 1989 VTM due to a reduced development footprint. Additionally, measures enforced by state NPDES permits establish a consistent program for mitigation of stormwater impacts and is designed to minimize cumulative, non-point source impacts from development activities. The project would not violate any water quality standards or waste discharge requirements.

Management and monitoring activities could potentially cause temporary soil erosion and increase the rate and/or amount of surface runoff if vegetation removal exposes topsoil or infiltration rates. However, changes are expected to be minor and the Plan Operator would take precautions to ensure that accidental release or spills do not occur. Therefore the project would not contribute to a cumulative impact.

- **Hazardous Materials.** The Proposed Action has the potential to expose people to hazardous materials during the use, transport, and disposal of materials during residential construction, household maintenance, herbicide application, and use of electric or gas-powered machinery. However, exposure would be limited and use would be monitored.

  Development of the Northeast Ridge may result in hazardous emissions or handling of hazardous materials, however project site is not located within .25 miles of an existing or proposed school and would not expose sensitive receptors. Therefore, there would not be a significant contribution to a cumulative effect.

- **Land Use.** The Proposed Action would not conflict with any existing or planned land uses. The proposed 2007 VTM is consistent with growth anticipated under the City's 1994 General Plan and falls with in the population projects prepared by ABAG. Overall, implementation of the Proposed Action would encourage compatible land use development patterns by ensuring that urban development is consistent with local general planning guidance, and that conservation occurs in a comprehensive manner consistent with the adopted HCP.

  Vegetation management and monitoring activities would not conflict with open space designation, nor any local plans, policies, or regulations. They would be conducted in accordance with the HCP, and facilitate protection and expansion of habitat for the Species of Concern. The Proposed Action supports implementation of the HCP. Therefore this impact would be considered beneficial.

- **Cultural Resources.** A record search from the Northwest Information Center of the California Historical Resources Information System (NWIC) concluded no historical resources recorded at the site. The Proposed Action could potentially result in the loss of previously unknown historic and archaeological resources, disturbance of human remains, or upset of a unique geologic feature. However, this would not represent a significant contribution to a cumulative impact.

- **Noise.** The Proposed Action would not result in any long-term impacts to ambient noise. Construction may result in temporary exposure to groundborne vibration or groundborne noise levels due to the use of earth-moving equipment. However, with the implementation of mitigation measures impacts would be reduced to not significant.

  Vegetation management may also result in minor noise generation. However, the Mountain are designated as open space, most vegetation management practices would not be auditable from adjacent land uses. The contribution to ambient noise levels from habitat management or limited construction, in

combination with other activities in the HCP study area, is not expected to result in a significant cumulative impact.

- **Public Health Hazards.** The Proposed Action would increase potential for wildlife hazards should a prescribed or pile burn escape. The proposed 2007 VTM would contribute a total of 144.66 acres of Conserved Habitat to the Plan Operator. Because it is a large open space surrounded by urbanization, the risk of wildland fire hazard on the Mountain is a considerable contribution to public health hazards in the region.

  Development of the Northeast Ridge also includes the removal of an approved road connection from Silverspot Drive to Guadalupe Canyon Parkway. However, a paved EVA road for the site would be retained at that location and therefore would not impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore the cumulative impact would be considered not significant.

  Management and monitoring activities have the potential for wildland fire hazards. However all burning on the Mountain would require assistance from CDF and/or the local fire departments, a permit from the BAAQMD, and a burn plan approved by CDF. Although fires may have a potential smoke interference with aircraft landing or departing from the San Francisco International Airport, it would be unlikely to occur with the required compliance with CDF and BAAQMD regulations. Therefore the cumulative impact would be considered not significant.

- **Public Services and Utilities.** The Proposed Action would maintain large areas in open space, which is a land use that does not place a high demand on public services. Reconfiguration of the Northeast Ridge would increase demand for emergency, police protection, and fire response services. However, this potential increase would be reduced from the 1989 VTM. New elementary and intermediate school students generated at buildout would not likely exceed optimum or maximum capacities. However, the applicant has donated a 1.7-acre site to BESD for a future elementary school reduce potential impacts to school services. The applicant also paid an in-lieu park fee to the BESD and City for construction of a school/park/recreation center site. Additionally, the applicant will dedicate 144.66 acres of Conserved Habitat to San Mateo County as Plan Operator of the San Bruno Mountain HCP. The 2007 VTM would not require or result in the construction of new storm water drainage facilities or expansion of existing facilities. The amount of impervious surface area in the new parcel lot configuration is less than that in the 1989 VTM, resulting in a reduction in overall and peak runoff volumes. There are no significant impact related to wastewater treatment, water supply, or landfill capacity. Reconfiguration of the Northeast Ridge would place a minor demand on public services, but would not constitute a considerable contribution to a cumulative impact.

  Management and monitoring activities have the potential for flaming hazards increasing the demand for fire protection services. However, all burning on the Mountain would require assistance from CDF and/or the local fire departments, a permit from the BAAQMD, and a burn plan approved by

CDF. Additionally, vegetation management would improve habitat conditions on the Mountain for the covered butterfly species. Continued protection of the endangered butterflies may support visitation to the County and State Parks land. Management and monitoring may also temporarily increase the rate and/or amount of surface runoff if vegetation removal exposes topsoil and alters infiltration rates. Although increased surface runoff may discharge into nearby storm water drainage facilities, the increase would be minor. Management activities – namely replanting and restoration – may result in short-term demand for water supplies as newly planted species are irrigated. However, this would not represent a significant contribution to a cumulative impact.

- **Transportation.** The Proposed Action would not generate a substantial number of vehicle trips or affect other transportation systems. Large habitat enhancement or restoration activities may result in short-term construction-related vehicle trips, but these would not contribute to a substantial cumulative impact to traffic. The 2003 Traffic and Circulation Technical Analysis determined that all study area intersections and roadways are projected to operate at satisfactory levels of service under the Existing plus Project and Cumulative conditions. No new impacts were identified for traffic and circulation issues associated with the proposed 2007 VTM. Project implementation would not conflict with adopted policies, plans, or programs supporting alternative transportation. New residences would have access to the Mountain's extensive trail system. Therefore, the cumulative impact would be considered not significant.

  Management and monitoring activities are not anticipated to have a substantial effect on area traffic volumes. Trip generation for maintenance activities would be minimal and parking needs for maintenance activities can be accommodated by existing facilities. Therefore the cumulative impact is considered not significant.

- **Population and Socioeconomics.** Local development decisions are driven by many factors and it is unlikely that the Proposed Action would result in substantial adverse affects on the area's economy, nor would it result in a disproportionate impact on low-income or minority populations. The Northeast Ridge development is anticipated in planning projections for the City of Brisbane, included in the 1982 HCP as a "Planned parcel", and accounted for in the ABAG's regional growth projections. The proposed Northeast Ridge development would not permanently change the conditions that affect individual businesses or the local economic climate (land use, transportation systems, customer base, etc.). Overall, the Proposed Action would facilitate logical and orderly development and conservation pursuant to the adopted HCP.

  Vegetation management would have few potential effects on economic conditions within the study area. However, the proposed endowment may improve the economic conditions of the Plan Operator, as significantly more funding would be available annually for implementation of vegetation management and monitoring activities. The Habitat Manager may hire additional field and/or biological staff to implement the expanded

management program. Such activities associated with the Proposed Action would not result in disproportionately high or significant effects on these populations. The projects contribution to a cumulative impact is not significant.

# 5.4 Environmentally Preferable Alternative

NEPA requires the identification of an environmentally preferable alternative (CEQs NEPA regulations (40 CFR 1505.2[b]). The environmentally preferable alternative is the alternative that would result in the least damage to the environment. Based on the analysis presented above, the environmentally preferable alternative is Alternative 1, the Proposed Action.

The impacts associated with Alternatives 1 and 2 are qualitatively similar for development of the Northeast Ridge parcel. However, development of a much larger neighborhood footprint in Alternative 2 would result in more severe environmental impacts. Additionally, lack of adequate funding and continuation of the existing habitat management program under Alternatives 2 and 3 actually results in continuing and progressive adverse effects to listed butterflies. The existing habitat management program focuses on conservation of high quality habitat, and is limited to areas where take of the callippe silverspot would be avoided. Existing low quality habitat is being progressively invaded by brush species and annual grasslands habitat is being lost. Thus, Alternative 2 and 3 result in significant unavoidable impacts to the Species of Concern due to inadequate habitat management.

Alternative 1 would provide for a greater level of conservation for the listed butterflies, including expanded habitat management to enhance grasslands that contain host plants for the callippe silverspot. The overall benefit to species would therefore be greater under Alternative 1.

# 5.5 Summary of Environmental Consequences of the Proposed Action

The following supports the conclusion that the Proposed Action would not have a significant effect on the quality of the human environment. This summary is based on the context and intensity criteria contained in the definition of "significantly" from CEQ's NEPA Regulations (40 CFR 1508.27). The ***Proposed Action***, incorporating all relevant measures to minimize and mitigate potential environmental consequences to the extent practicable, ***would not***:

- have significant adverse impacts, even if the Federal agency believes that on balance the effect will be beneficial;
- substantially affect public health or safety;

- substantially affect unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas;
- substantially affect the quality of the human environment where the issues are likely to be highly controversial;
- affect the human environment where the risks are highly uncertain or unique or unknown;
- establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration;
- relate to other actions with individually insignificant but cumulatively significant impacts;
- adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or cause loss or destruction of significant scientific, cultural, or historical resources;
- adversely affect an endangered or threatened species or critical habitat; nor
- threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

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Chapter 6

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Chapter 7
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