

mitigate such impacts. Implementation of the policies and implementation measures of the FDCP will assure that potential impacts on special-status plant species will be *less than significant*.

Mitigation Measures

No mitigation measures are required.

Discussion/Conclusion with Incorporation of the Forest Ranch Concept Plan: Potential habitat for Brandegees' clarkia occurs within the mixed chaparral and montane hardwood habitats on the Concept Plan site. Populations of this species are known from Butte, El Dorado, Nevada, Placer and Yuba counties. Although this species was not observed during field reconnaissance, suitable habitat occurs throughout the site. Populations potentially occurring within mixed chaparral habitat are not likely to be affected by Concept Plan implementation because this habitat occurs in areas designated as open space. However, implementation of the Concept Plan within montane hardwood habitat may result in removal of habitat for this species. Brandegees' clarkia is a 1B listed plant with the CNPS, which identifies it as a species rare, threatened or endangered in California as well as in other parts of the United States. Impacts to this species are *potentially significant*.

Mitigation Measures

Implementation of the following mitigation measures will reduce project impacts to a *less than significant level*:

3.6-9 *Focused rare plant surveys shall be conducted in accordance with the Forest Ranch Specific Plan Development Standard 2.C.1-2 prior to approval of tentative maps or ground disturbing activities within the Forest Ranch Concept Plan area. FDCP goals, policies and implementation measures designed to mitigate adverse impact to rare plants that may be discovered shall be followed to reduce potential impacts to less than significant.*

Impact 3.6-10 Adverse impacts on special-status avian species in the Plan area due to development in accordance with the proposed FDCP.

Discussion/Conclusion: Special-status avian species including bald eagle, Northern goshawk, western burrowing owl, black swift, American peregrine falcon, California spotted owl, and tricolored blackbird may utilize the planning area for foraging and nesting habitat. The nests of raptors, including bald eagle, Northern goshawk, western burrowing owl, American peregrine falcon, and California spotted owl, as well as the nests of migratory bird species, which include these raptor species in addition to black swift and tricolored blackbird, are protected under the Migratory Bird Treaty Act (MBTA). Active raptor nests are also afforded additional protection in the California Fish and Game Code 3503.5. As such, proposed development within areas supporting suitable nesting habitat (coniferous forest, montane hardwood, chaparral, annual grassland, and blue oak woodland) for any or all of these species must be surveyed prior to construction to determine the presence/absence of these species nesting within the site. If any or

all of these species are found actively nesting within an area proposed for development, construction activities within 500 feet of the nest location must be limited.

The proposed FDCP includes the following policies that address this impact:

4.A.3-1 and 4.A.3-2

In addition to these policies, Implementation Measures #3 and #5 described in Impact 3.6-9 further address this impact. However, because they do not include specific references to limitation of construction activities, this impact is *potentially significant*.

Mitigation Measures

Implementation of the following mitigation measure will reduce this impact to a *less than significant level*:

3.6-10a *Focused special-status avian species surveys shall be conducted prior to approval of tentative maps or ground disturbing activities within the FDCP area. If any or all of the special-status avian species listed in Impact Discussion/Conclusion 3.6-10 are found actively nesting within an area proposed for development within the Plan area, no construction activities shall occur within 500 feet of the nest location. Construction activities may resume within this buffer zone after the young have fledged from the nest and the nest is abandoned for that breeding season.*

Discussion/Conclusion with Incorporation of the Forest Ranch Concept Plan: Mixed coniferous forest and montane hardwood habitats on the Concept Plan site support potential nesting habitat for raptors and other migratory and resident birds, including American peregrine falcon, black swift, California spotted owl, hermit warbler, Lewis' woodpecker, loggerhead shrike, oak titmouse, northern goshawk, rufous hummingbird, and common raptors. The destruction of active migratory bird nests, including raptors, is a violation of the MBTA, and disruption or destruction of an active raptor nest is also a violation of Fish and Game Code Section 3503.5. Eventual impacts to nesting raptors and other special-status migratory and resident birds are *potentially significant*.

Mitigation Measures

Implementation of the following mitigation measure will reduce impacts to special-status bird species to a *less than significant level*:

3.6-10b *Mitigation Measure 3.6-10a shall implemented within the boundaries of the Forest Ranch Concept Plan area*

Impact 3.6-11 Adverse impacts on special-status mammal species in the Plan area due to development in accordance with the proposed FDCP.

Discussion/Conclusion: Special-status mammal species that have the potential to occur within the Plan area include pine marten, Sierra Nevada showshoe hare, Sierra Nevada red fox, pacific fisher, and numerous bat species including greater western mastiff bat, spotted bat, small-footed myotis bat, long-eared myotis bat, fringed bat, long-legged myotis bat, and Yuma myotis. These species may utilize the Plan area for shelter, foraging, and breeding habitat. Because these species are sensitive to federal, state, and/or local resource agencies, focused surveys for these species should be conducted prior to the approval of any project that may remove or fragment suitable habitats for these species. If any or all of these species are observed during the focused surveys, or if evidence of these species is found within the survey area, the appropriate resource agency should be contacted and effective management strategies should be developed to protect these species and their associated habitats.

The proposed FDCP includes Policy 4.A.3-1 and Implementation Measures #3 and #5 (cited in Impact 3.6-9 above). Implementation of the policies and implementation measures of the FDCP will assure that potential impacts on special-status mammal species will be *less than significant*.

Mitigation Measures

No mitigation measures are required.

Discussion/Conclusion with Incorporation of the Forest Ranch Concept Plan: Pacific fisher and pine marten may utilize the mixed coniferous forest and montane hardwood habitats on the project site as part of their home range. Additionally, these species could den within suitable habitats onsite, although their potential for occurrence is low. These special-status mammal species are protected by federal and state resource agencies. Impacts to these species are *potentially significant*.

Mitigation Measures

Implementation of the following mitigation measures will reduce impacts on special-status mammal species to a *less than significant* level:

3.6-11 *Focused surveys for Pacific fisher and pine martin shall be conducted in accordance with the Forest Ranch Specific Plan Development Standard 2.C.1-2 prior to approval of tentative maps or ground disturbing activities within the Forest Ranch Concept Plan area. FDCP goals, policies and implementation measures designed to mitigate adverse impact to rare special-status mammals that may be discovered shall be followed to reduce potential impacts to a less than significant level.*

Impact 3.6-12 Implementation of the Forest Ranch Concept Plan will remove potential roosting habitat for special-status bat species.

Several special-status bat species have the potential to roost within the mixed coniferous forest and montane hardwood habitats on the Concept Plan site. Bats roost in a variety of locations such as rock crevices, under bark, in trees, in buildings, under bridges, and in culverts. Depending on the species, bats may utilize separate day and night roosts. In addition, winter

hibernacula and maternity roosting sites are occupied at different times of the year. These special-status bat species are considered species of concern to CDFG and/or USFWS. Eventual removal of potential roosting habitat is a *potentially significant* impact.

Mitigation Measures

Implementation of the following measures will reduce impacts to special-status bat species to a *less than significant* level:

- 3.6-12a *Focused surveys to determine the presence/absence of roosting bats shall be conducted prior to approval of tentative maps or ground disturbing activities within the FDCP area. Maternity roosts are generally occupied by mothers and young between May and August (Zeiner et al., 1990b). Mitigation Measure 3.6-12b is not required if there are no bat species utilizing the project site as roosting habitat.*
- 3.6-12b *If bats are determined to roost onsite, consultation with CDFG and/or USFWS shall be requested to determine measures to avoid disturbance during construction. If an active maternity roost is identified, at a minimum, no construction activities shall occur within 500 feet until the young are able to fly from the roost. If active day or night roosts are found onsite, measures shall be implemented to safely flush bats from the roosts prior to the onset of construction activities. Such measures may include removal of roosting site during the time of day the roost is unoccupied or the installation of one-way doors, allowing the bats to leave the roost but preventing them from re-entering.*

Impact 3.6-13 Adverse impacts on special-status amphibian and reptile species in the plan area due to development in accordance with the proposed FDCP.

Discussion/Conclusion: Northwestern pond turtle, mountain yellow-legged frog and foothill yellow-legged frog could utilize the rivers, streams, and/or open water habitats throughout the Plan area. Additionally, western spadefoot toads may utilize annual grassland habitat with adjacent seasonal wetlands, and California horned lizard may occur in habitats supporting suitable soil conditions throughout the Plan area. The status of these species is of concern to federal, state, and/or local resource agencies. Consequently, prior to approval of projects proposing to affect suitable habitat for these species, a focused survey should be conducted to determine the presence/absence of these species within the project area. If one or any of these species is found within the survey area, the appropriate resource agency should be contacted and species-specific management strategies should be developed to ensure the protection of the species and their associated habitat.

A recent survey has detected the California red-legged frog to be located in the Plan area within the Michigan Bluffs vicinity. A focused survey will need to be conducted to determine the presence of this species within the Michigan Bluffs area in particular prior to approval of any projects proposed. When presence is confirmed the appropriate resource agency would be contacted and species-specific management strategies will be developed. Focused studies should

be conducted to determine the presence/absence of this species in for any proposed project with the in Plan area as a whole.

The proposed FDCP includes the following policies that address this impact:

4.A.1-15, 4.A.2-2, 4.A.3-1, 4.A.3-2 and 4.A.3-8

In addition to these policies, the proposed FDCP includes Implementation Measures #3 and #5 (cited in Impact 3.6-9 above), as well as #6, which requires a minimum 100 foot non-development setback from the centerline of all perennial streams and a minimum 50 foot setback from the centerline of intermittent streams are required for all development projects. Special-status amphibian and reptile species are protected by federal and state resource agencies. Impacts to these species are *potentially significant*.

Mitigation Measures

3.6-13a *Focused special-status amphibian and reptile species surveys shall be conducted prior to approval of tentative maps or ground disturbing activities within the FDCP area. If any or all of the special-status amphibian or reptile species listed in Impact Discussion/Conclusion 3.6-13 are found within an area proposed for development within the Plan area, FDCP goals, policies and implementation measures designed to mitigate adverse impact to special-status amphibian and reptile species that may be discovered shall be followed to reduce potential impacts to less than significant.*

Discussion/Conclusion with Incorporation of the Forest Ranch Concept Plan: Special-status amphibian and reptile species are protected by federal and state resource agencies. Impacts to these species are therefore considered *potentially significant*. Development activities within the Forest Ranch Concept Plan area will be required to adhere to the FDCP policies and implementation measures discussed above and Mitigation Measure 3.6-13a. Therefore, potential impacts on special-status amphibian and reptile species will be *less than significant*.

Mitigation Measures

3.6-13b *Mitigation Measure 3.6-13a shall implemented within the boundaries of the Forest Ranch Concept Plan area*

Impact 3.6-14 Adverse impacts on special-status fish species in the Plan area due to development in accordance with the proposed FDCP.

Discussion/Conclusion: No listed anadromous fish species are likely to occur within the Plan area due to obstructions (i.e., Folsom Dam, Nimbus Dam) in the southern reaches of the American River. Additionally, the remaining special-status fish species listed in Table 3.6-2 are not likely to occur within the Plan area due to obstructions in the southern reaches of the American River and habitat/range limitations. This impact is *less than significant*.

Mitigation Measures

No mitigation measures are required.

Discussion/Conclusion with Incorporation of the Forest Ranch Concept Plan: Development activities within the forest Ranch Concept Plan area will not have and adverse impact on special-status fish species for the same reasons discussed above for the entire FDCP area and, therefore, potential impacts on special-status fish species will be *less than significant*.

Mitigation Measures

No mitigation measures are required.

Impact 3.6-15 Adverse impacts on special-status invertebrate species in the Plan area due to development in accordance with the proposed FDCP.

Discussion/Conclusion: Three invertebrate species (spiny rhyacophilan caddisfly, Yates' snail, and valley elderberry longhorn beetle) have the potential to occur within the Plan area. The spiny rhyacophilan caddisfly is known from one stream within the Plan area, and may occupy additional streams and rivers in reaches supporting cool flowing water conditions. Projects having the potential to affect the water quality of these water features could affect this species. Consequently, surveys for this species should be conducted prior to the approval of projects that may affect water quality in this region. If this species is found within the Plan area, measures should be taken, in consultation with the USFWS, to ensure that the water quality is not altered in a manner that would adversely affect this species.

Yates' snail could potentially occur on limestone outcroppings or in caves within the Plan area. Prior to the approval of proposed projects within the Plan area, a survey should be conducted to determine if suitable habitat for this species occurs within the project site. If suitable habitat is found, a focused survey for this species should be conducted to determine the presence/absence of this species within the project area. If this species is determined to occur onsite, and the proposed development cannot avoid these areas, consultation with the USFWS would be required to determine appropriate conservation/management strategies for this species.

Valley elderberry longhorn beetle could occur in association with elderberry shrubs within the Plan area. To date, no known occurrences of valley elderberry longhorn beetle are recorded within the Foresthill Divide vicinity, and no known focused surveys for elderberry shrubs have been conducted within the Plan area. Prior to the implementation of a proposed project within the Plan area, a focused survey for elderberry shrubs should be conducted to determine the presence/absence of shrubs on the project site. If elderberry shrubs are found, these locations should be avoided. If shrubs cannot be avoided, consultation with the USFWS will be required to determine appropriate mitigation strategies. This is a *potentially significant* impact.

The proposed FDCP includes Policies 4.A.1-6, 4.A.3-1, 4.A.3-2, 4.A.3-8, as well as Implementation Measures #3, 5 and 6 (cited in Impacts 3.6-9 and 3.6-13 above). Implementation

of the policies and implementation measures of the FDCP will assure that potential impacts on special-status invertebrate species are *less than significant*.

Mitigation Measures

With incorporation of the goals, policies and implementation measures of the FDCP, no mitigation measures are required.

Discussion/Conclusion with Incorporation of the Forest Ranch Concept Plan: The valley elderberry longhorn beetle is found near riparian habitats. Because this species is dependent on elderberry shrubs for the larval stage of its life cycle, elderberry shrubs are considered habitat for this species. No elderberry shrubs were observed on the Concept Plan site during field reconnaissance; however, a focused survey was not conducted, consequently there may be shrubs that were not observed. Because valley elderberry longhorn beetle is a federally listed threatened species, eventual removal of any elderberry shrubs as part of development would be a *potentially significant* impact.

Implementation of the following mitigation measures will reduce impacts to valley elderberry longhorn beetle to a *less than significant* level:

- 3.6-15a *A focused survey for elderberry shrubs shall be conducted by a qualified biologist to determine the presence/absence of the valley elderberry longhorn beetle in accordance with the Forest Ranch Specific Plan Development Standard 2.C.1-2 prior to approval of tentative maps or ground disturbing activities within the Forest Ranch Concept Plan area. If no elderberry shrubs are identified onsite, Mitigation Measure 3.6-15b is not required.*
- 3.6-15b *If elderberry shrubs are identified within the development area, consultation with USFWS shall be required. Ideally, the project shall avoid removal or indirect impacts to elderberry shrubs. The USFWS typically requires a 25-foot setback from the outer dripline edge of each shrub. If the shrubs cannot be avoided, a mitigation plan shall be implemented which must include one of more of the following:*
- 1. Obtaining credits at an approved mitigation bank; or*
 - 2. Implementation of an onsite mitigation and monitoring plan that includes transplantation of the shrub(s) and planting of elderberry seedlings.*

Impact 3.6-16 Adverse impacts on jurisdictional waters of the United States in the Plan area due to development in accordance with the proposed FDCP.

Discussion/Conclusion: Jurisdictional waters of the U.S., including the North Fork of the American River and associated tributaries, Sugar Pine Reservoir, and Big Reservoir, occur in the Plan area. Several streams, ponds, and intermittent drainages are also located within the Plan area. These water features have not been delineated, and additional jurisdictional wetlands or waters of the U.S. may occur within the Plan area. Consequently, a wetland delineation must be

conducted and verified by the U.S. Army Corps of Engineers prior to development of any project proposed within the Plan area. Encroachment into areas protected under Corps jurisdiction will require authorization from the Corps, and may require Regional Water Quality Control Board (RWQCB) water quality certification and a CDFG Streambed Alteration Agreement.

The proposed FDCP includes the following goal and policies that address this impact:

Goal 4.A.2. and Policies 4.A.2-1, 4.A.2-2 and 4.A.2-5

Additionally, the FDCP includes Policies 4.A.3-1, 4.A.3-2, and 4.A.3-8 and Implementation Measures #3, 5 and 6 (cited in Impacts 3.6-9 and 3.6-13 above). The FDCP also includes Implementation Measure #7, which requires implementation of the Placer County Stream Management Guidelines and wetland banking program in the Plan area, and Implementation Measure #8, which requires implementation of the County's guidelines for creek maintenance practices that ensure native vegetation is not removed unnecessarily in the Plan area. Implementation of the policies and implementation measures of the FDCP will assure that potential impacts on jurisdictional wetlands are *less than significant*.

Mitigation Measures

With incorporation of the goals, policies and implementation measures of the FDCP, no mitigation measures are required.

Discussion/Conclusion with Incorporation of the Forest Ranch Concept Plan: The Concept Plan site supports approximately 32 acres of potential jurisdictional waters of the U.S., which includes a spring, a pond, and perennial and intermittent drainages. Thirty-one acres of the potential jurisdictional waters on the site will not likely be affected by project implementation; these waters occur in areas designated for open space. However, one acre of potential jurisdictional waters occurs within the proposed development area. Jurisdictional waters of the U.S. are regulated by the Corps and CDFG. Additionally, these areas are protected in the Foresthill General Plan. Impacts to jurisdictional waters of the U.S. are *potentially significant*.

Implementation of the following measures will reduce impacts to jurisdictional waters to a *less than significant* level:

- 3.6-16a *Potentially impacted jurisdictional waters of the U.S. shall be delineated according to Corps methodology. The map shall be submitted to the Corps for verification and the appropriate Section 404 permit shall be acquired prior to submittal of improvement plans. Section 401 Water Quality certification or waiver must also be acquired.*
- 3.6-16b *Any jurisdictional waters that would be lost or disturbed shall be replaced or rehabilitated on a "no net loss" basis in accordance with the Corps' mitigation guidelines. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by methods agreeable to the Corps.*

3.6-16c *Prior to issuance of a grading permit, or approval of the Improvement/Grading Plans, a Streambed Alteration Agreement shall be obtained from CDFG, pursuant to Section 1600 of the California Fish and Game Code, for each stream crossing and any other activities affecting the bed, bank, or associated riparian vegetation of the stream. If required, the project applicant shall coordinate with CDFG in developing appropriate mitigation, and shall abide by the conditions of any executed permits.*

Impact 3.6-17 Adverse impacts on riparian habitat in the Plan area due to development in accordance with the proposed FDCP.

Discussion/Conclusion: Riparian habitats support numerous plant and wildlife species and are considered a sensitive habitat in provisions of the Placer County General Plan (Policy 6.A.1). Projects that propose encroachment into these areas must follow the guidelines presented in the Placer County General Plan and may require a Streambed Alteration Agreement with the CDFG.

The proposed FDCP includes Policies 4.A.2-1, 4.A.2-2, 4.A.2-5, 4.A.3-1, 4.A.3-2, and 4.A.3-8, as well as Implementation Measures #3, 5, 6, 7 and 8. The FDCP also includes the following policies that address this impact:

4.A.7-1, 4.A.7-2 and 4.A.7-3

Implementation of the policies and implementation measures of the FDCP will reduce potential impacts on riparian habitat in the Plan area to a *less than significant* level.

Mitigation Measures

With incorporation of the goals, policies and implementation measures of the FDCP, no mitigation measures are required.

Discussion/Conclusion with Incorporation of the Forest Ranch Concept Plan:

Sparse riparian vegetation occurs around the margins of open water habitat and along the river/stream habitat on the Concept Plan site. The majority of this habitat occurs in areas designated for open space. However, a small portion of riparian habitat may occur within the proposed development area. Direct and indirect impacts to this habitat in the easterly portion of the Concept Plan site could occur due to project implementation. Although riparian habitat does not receive protection from federal or state resource agencies, this habitat is recognized as a significant resource in the Foresthill General Plan. Riparian habitats are also of concern to the CDFG. Impacts to riparian habitat are *potentially significant*.

Mitigation Measures

Implementation of the following measures will reduce impacts on riparian habitat to a *less than significant* level:

3.6-17a *As provided in Mitigation Measure 3.6-16c, prior to issuance of a grading permit, or, approval of the Improvement/Grading plans, a Streambed Alteration Agreement shall*

be obtained from CDFG, pursuant to Section 1600 of the California Fish and Game Code, for each stream crossing and any other activities affecting the bed, bank, or associated riparian vegetation of a stream.

3.6-17b *A Specific Plan prepared for the Forest Ranch Concept Plan area shall specify sensitive habitat buffers that shall be measured as follows: 100 feet from the centerline of perennial streams, 50 feet from centerline of intermittent streams, and 50 feet from the edge of sensitive habitats to be protected. Some exceptions may be made if reasonable use of the property would otherwise be denied, the location is necessary to avoid or mitigate hazards to the public, the location is necessary for repair or construction of infrastructure where there is no feasible alternative. If encroachment into a riparian area is proposed, the following criteria shall be implemented in descending order of desirability:*

- Avoid the disturbance of riparian vegetation;*
- Replace riparian vegetation (on-site, in-kind);*
- Restore another section of creek (in-kind); and/or*
- Pay a mitigation fee for restoration elsewhere in the Plan area.*

Impact 3.6-18 Adverse impacts on wildlife movement corridors/deer migration corridors in the Plan area due to development in accordance with the proposed FDCP.

Discussion/Conclusion: Wildlife movement corridors are essential to the distribution of wildlife, providing a means of movement throughout ranges that are encroached with human disturbances. Because a majority of the habitats within the Plan area is relatively undisturbed, these areas provide a means for wildlife movement throughout the Plan area. Further development within these areas will fragment this habitat and may result in obstructing this movement corridor. The effect on deer migration and wildlife movement should be analyzed prior to the approval of any proposed development within the Plan area. The analysis should include consultation with the CDFG and local resource agencies to properly evaluate the current wildlife movement and deer migration patterns in the Plan area.

The FDCP includes the following policies that address this impact:

4.A.1-7, 4.A.3-1, 4.A.3-2, 4.A.3-4, 4.A.3-10 and 4.A.3-11

Implementation of these policies will reduce impacts on wildlife movement corridors/deer migration corridors in the Plan area. However, because new development will occur that may affect wildlife movement corridors, this impact is ***significant and unavoidable***.

Mitigation Measures

No additional mitigation measures are available. Therefore, this impact is ***significant and unavoidable***.

Discussion/Conclusion with Incorporation of the Forest Ranch Concept Plan: As proposed, the project, in conjunction with other future developments on the Foresthill Divide, would contribute to the loss of natural, undisturbed open space in the region, resulting in a decline of biological resources and species diversity. The encroachment of urbanized areas into natural, relatively undisturbed open space is a direct threat to wildlife species in Foresthill, and increased human use results in the degradation of natural undisturbed habitats. Road construction, site grading, and the construction of residential and recreational uses directly removes native plant species, removes habitat for wildlife, and increases the fragmentation of open space in the region, effecting wildlife dispersal. Development of the Forest Ranch project, in conjunction with future projects, will result in the restriction of wildlife movement. Implementation of FDCP policies will reduce impacts on wildlife movement corridors/deer migration corridors in the Concept Plan area. However, because new development will occur that may affect wildlife movement corridors, this impact is *significant and unavoidable*.

Mitigation Measure

No additional mitigation measures are available. Therefore, this impact is *significant and unavoidable*.

Impact 3.6-19 Cumulative adverse impacts on common resident plant and animal species including mixed coniferous forest, montane hardwood, and oak trees in the Plan area due to development in accordance with the proposed FDCP.

Discussion/Conclusion: As noted in the “Setting” discussion, the Plan area supports habitat for numerous common resident plant and migratory wildlife species (i.e., California ground squirrel, raccoon, opossum, blacktail jackrabbit, black bear, etc.). The continuous expansion of urban development encroaches into habitats utilized by these species. The FDCP incorporates and encourages efforts to minimize encroachment into currently undisturbed habitats. Because these common species are not formally protected under the federal or state endangered species acts, cumulative impacts on these species are considered *less than significant*.

Mitigation Measures

No mitigation measures are required.

3.7 CULTURAL RESOURCES

3.7.1 INTRODUCTION

A Heritage Resource Element was prepared for the FDCP by Susan Lindstrom, Ph.D., Consulting Archaeologist. The Element is incorporated in the text of the Setting and Impacts and Mitigation Measures sections below. The appendices (minus confidential appendices) are included as Appendix B of this EIR.

3.7.2 SETTING

PURPOSE

The purpose of the Cultural Resources section of the FDCP is the identification and, to the extent possible, preservation of archaeological and historical resources in the Plan area. The Foresthill Divide Community Plan area contains a rich heritage that is marked by numerous archaeological and cultural properties. Heritage resources are being lost to natural deterioration and to development-related impacts. Heritage resources are especially at risk as the Plan area assumes an increasing role as a “bedroom” community for Auburn and Sacramento. Incoming residents and visitors, and the new construction designed to accommodate them, may compromise the rich sense of heritage and unique historical identity of the Plan area. An appreciation of the heritage of the Foresthill Divide will engender the preservation and rejuvenation of old Foresthill and its surroundings and insure that both long-term and incoming residents and visitors to Foresthill can appreciate the area where they have chosen to live and visit. Historic structures are also an important visual element of the Foresthill Divide. The goals and policies which follow are intended to assure that future generations will have the opportunity to form a sense of community pride and identity from the achievements of the people that lived before them.

DISCUSSION

The following physical and cultural background draws heavily from contexts presented in the “Historical, Architectural, and Archaeological Resources of Placer County, California” (Terhorst and Gerike 1992) and in work by Baker (2000), Baker and Shoup (1992), and Baker, Shoup and Brack (1993) associated with the Highway 124 Project. Further information is taken from Carlson’s (1986) ethnographic overview and Markley and Henton’s (1985) prehistoric overview of the Tahoe National Forest. Details regarding the physical and cultural setting of the Foresthill Divide are found in these sources and will not be repeated here. References cited in this section are listed in Appendix D of the FDCP.

Physical Setting

The Foresthill Divide is a long northeast-trending ridge system separating the North and Middle Forks of the American River. The ridge ranges in width from two to ten miles. As one of the major east-west ridge systems of the north-central Sierra Nevada, the Divide would have provided relatively easy access for prehistoric populations moving east and west over the crest. However, the

steep canyons and rugged terrain to the north and south of the Divide may have been a barrier to travel and trade, and ultimately contributed to cultural conservatism and the development of local identities and differences, which included basic technology and economic and settlement patterns (Baker 2000:281). The Foresthill Divide has been sculpted by tectonic forces and stream erosion. During times of glacial advances, Sierran streams steepened their channels, creating steep slopes and tributary canyons and destabilizing riverside banks. It is during these times that ridgetop village sites may have been preferable to village locales along streams. Ridges were also the preferred locales for Euroamerican settlements and ranchlands.

Rocks in the Foresthill region represent a geologic history spanning nearly 300 million years. The rocks underlying the Divide are part of the Mother Lode Belt and include slates and shales of the Mariposa Formation. The Mariposa Formation is composed of ancient seafloor sediments. These sedimentary rocks are associated with underlying volcanic rocks of the Logtown Ridge Formation. The flat ridge of the Foresthill Divide is formed by a complex system of Tertiary channels capped by lavas that are included within the Mehrten Formation and categorized as andesite mud-flows. The underlying ancient Tertiary river channels contain auriferous deposits that were the focus of hydraulic and drift mining for gold by incoming Euroamericans. Prehistoric populations also appear to have had detailed knowledge of these geological deposits (Baker 2000:10). For example, the complex geology of the Foresthill Divide region provided a variety of stone for tool manufacture, including slate and schist, chert, and igneous and metamorphic materials. In addition, basalt and obsidian were brought or traded into the area from source locations as far as the Truckee-Tahoe Basin, Bodie Hills, Napa, and locales in northeast California and northwest Nevada. Also, prehistoric populations visited salt marshes near Cool and salt springs near Lincoln and mined quartz crystal quarries in the Middle Fork Canyon for toolstone and ceremonial use, and red and yellow ochre near Clipper gap for ornamentation and rock art.

The Mediterranean climate of the Plan area is characterized by hot summers and cool winters, with most precipitation falling during the winter. The Plan area receives little snow, as the winter snow line on the Divide is around 3,000 feet in elevation. The North and Middle Forks of the American River form the major hydrological features; fresh water sources are relatively abundant on top of the Divide. Rivers cut steep canyons up to 1,000 feet below the top of the Divide that presented major obstacles for both prehistoric and historic populations traveling off of the Divide.

The Plan area spans an elevation range roughly between 600 and 4,800 feet and encompasses several major life zones that gradually change with increasing altitude. Mountain ridges are colonized by mixed forests, oaks, shrubs, grasslands, and meadows--habitat for diverse faunal resources. The rich array of plants and animals were of subsistence and economic importance to both aboriginal inhabitants and incoming Euroamericans.

Prehistory and the Native American Period

Clear boundary determinations for Native American residents along the Foresthill Divide are confounded by the complete disruption of aboriginal cultures by early Euroamericans and of traditional practices involving inter-group trade, politics, marriage, and ritual. The Foresthill Divide lies firmly within the traditional territory of the Hill Nisenan (or Southern Maidu), a Penutian speaking group that inhabited the west-central Sierra Nevada. The Divide is peripheral land used by

the Washoe, Hokan language speakers who chiefly occupied the west-central Great Basin along the eastern Sierran flank and its crest (Beales 1933; d’Azevedo 1966; Levey 1978; Littlejohn 1928). After historic contact, Northern Miwok, also Penutian speakers, may have resided here; Northern Miwok currently reside in the Plan area. The Hill Nisenan held territory in the foothill and mountainous portions of the Yuba, Bear and American rivers, and the lower drainages of the Feather River. The Hill Nisenan recognized three divisions within their group based on slight linguistic and cultural differences. The Foresthill people belonged to one of the subgroups with its “center of influence” at Auburn (Littlejohn 1928:15). Nuclear Washoe tribal lands were about 2,000 square miles surrounding Lake Tahoe, with much larger peripheral lands having flexible, undefended boundaries. The area between snowline on the west Sierra slope and the Sierran crest was shared between the Nisenan and Washoe. Tradition holds that the Washoe and Nisenan had contact at Westville, east and upslope of the Plan area, and that encounters were not always friendly.

Environmental phenomena such as springs and drainages, unique geological outcrops, and different land surface exposures with variable slopes created extreme variety in the accompanying plant and animal communities upon which aboriginal populations depended. Like most hunters and gatherers, vegetable foods formed the subsistence baseline, although they used a wide range of plant and animal species. Generally, the least productive time of the year for both the Hill Nisenan and Washoe was late winter-early spring. Hill Nisenan caught salmon during spring runs up the North and Middle Forks of the American Rivers and their tributaries. Throughout the summer, both groups gathered nuts and seeds, roots, berries, fungi, and greens. Expeditions to hunt large game took place within the higher elevations during the fall. Acorns became available in massive quantities in the autumn. Acorn eating is the hallmark of California Indians and they were the primary staple for those groups who inhabited the western foothills of the Sierra. The Washoe went to great lengths to obtain acorns in trade from their western neighbors.

Lower elevations encompassed by the Plan area were occupied on a permanent or semi-permanent basis, with higher elevations inhabited at various times of the year by smaller groups that made seasonal movements in order to procure economic resources as they became available. The archaeological imprint of these ancient subsistence activities are distinctive, with diverse environmental zones closely corresponding to a variety of specific site types, such as villages, multi-task camps, task-specific locales, and special use areas.

Hill Nisenan villages and year-round encampments were clustered in the lower elevations of the Plan area. Villages were usually placed on ridge tops and on large flats along major streams. Permanent villages are represented archaeologically by culturally enriched and darkened soils (or “midden”) which contain artifacts, charcoal, organic debris, and/or house pit and dance house depressions. Villages hosted important social gatherings and religious ceremonies. Dances to celebrate seasonal events and honor ancestors and deities were held in large semi-subterranean dance houses. Hill Nisenan villages consisted of from 4 to 12 separate dwellings, housing a nuclear or polygamous family. Larger social organizations, called “tribelets”, were formed by several villages uniting under a single chief. Tribelet boundaries were marked by natural ridges between streams. No permanent Nisenan winter village occupation is reported above approximately 4,000 feet elevation on the western slope.

The Washoe generally wintered in the Truckee Meadows area on the east slope of the Sierra and spent summers in the higher elevations in and around the Truckee-Tahoe Basin and west of the crest. Compared to the Hill Nisenan, the Washoe were a relatively informal and flexible political collectivity. While semi-permanent villages were maintained along the eastern Sierran front, the Washoe as a whole were more mobile than the Nisenan, and the Washoe have a tradition of making long treks across the Sierran passes to hunt and gather acorns and to trade with Maidu and Miwok neighbors.

At seasonal base camps, the occupation by fewer people for briefer periods of time precluded the buildup of deep midden deposits. Such seasonal camps are manifest archaeologically by a wide range of cultural items (including stone tools, waste flakes from the manufacture of stone tools, and milling equipment such as bedrock mortars and pestles and hand stones and portable milling slabs). This artifact inventory indicates that multiple tasks were pursued.

Single-task specific sites were located throughout Washoe and Nisenan territory and were used at variable times of the year as satellite locales aimed at a specific function. Task sites were often located away from camps or villages and near concentrations of plant, animal or fish resources. For example, bedrock mortar stations were positioned in oak groves, fishing stations were established near productive spawning streams, and hunting stations were placed in proximity to deer migration routes. Aboriginal trek routes were patterned after game trails, were later used by the emigrants, and are often the precursors of our modern transportation systems.

Special use sites were often isolated from living areas and comprise petroglyphs (or rock writings), cemeteries, and quarries where toolstone such as chert or basalt was mined and roughly fashioned into tools.

These land use patterns, known from Washoe and Nisenan protohistoric times, are generally consistent with interpretations derived from numerous archaeological investigations within Placer County (and a few excavations on the Foresthill Divide). The archaeological record indicates a shift from sparsely populated hunting-based societies in earlier times to growing populations with increasing reliance on plant foods by the time of historic contact. Also, paleoclimates may have been warmer and drier in the past, allowing for year-round occupation of the higher elevations. Occupation along the Divide may extend earlier than 5000 years ago and continue up to the time of historic contact. Between about 7000 and 5000 years ago, during the Early Archaic Period, climates were warmer and drier and drying lowlands may have prompted human populations to travel to upland resource zones where prehistoric economies incorporated seed processing and fishing, as well as hunting. During the Middle Archaic period, dating from about 5000 to 1300 years ago, climates became moister and, with a return to more optimal living conditions, population densities increased. More intensive prehistoric use of the Foresthill Divide by mixed-mode foragers/collectors began during this period. The Late Archaic period, about 1300 years ago to historic contact, has been equated with the Nisenan and Washoe cultures, as described in ethnographic accounts written by early anthropologists. This period is marked by an overall drying trend, with cool and moist episodes alternating with extended severe drought. Throughout the Late Archaic, prehistoric populations continued to increase.

The largest available body of ethnographic data on the Nisenan and Washoe was collected between the 1890s to the 1930s. Most of this information was gathered after aboriginal populations had been substantially reduced and the process of acculturation was well underway. The Washoe and the Nisenan inhabited the heart of two of the most important mineral resource zones in the western United States, the Sierra Nevada Mother Lode and the Comstock Lode of Nevada, respectively. By the 1850s Euroamericans had permanently occupied their territories and changed traditional lifeways. Mining, lumbering, grazing, commercial fishing, tourism, and the growth of settlements disrupted traditional Indian relationships to the land. As hunting, fishing, and gathering wild foods were no longer possible, they were forced into dependency upon the Euroamerican settlers.

Little is known about the period of initial contact on the Divide between Indians and Euroamericans. Resistance to white incursions occurred, mostly in the form of Indian raids upon the stock and camps in desperate attempts to find food. Disruption of subsistence patterns, starvation, disease, and violence resulted in a severe decline in Native populations and abandonment of villages. The Federal Government's Indian "relocation" policies in California were set in motion during the 1850s with the creation of rancherias and reservations. Nisenan either stayed on reservations or rancherias and married into their own or into other Indian tribes, or became assimilated into the dominant Euroamerican society. Nonetheless, reports of early anthropologists and census records indicate that some Nisenan remained in their home places. Nisenan recall place names for several village locations on the Divide (Littlejohn n.d.; 1928): Pow' o at Damascus, To I mom at Red Point, Kil' im yan at Westville, Om'lam (meaning "tall rocks") at Mile Hill Toll House, Hem'hem near Yankee Jim's, Wa'tas near Spring Garden, O'pok pok at Todd's Valley, etc. A Nisenan cemetery located in the Spring Garden/Todd's Valley area continues to be used and maintained. Today, significant numbers of Nisenan are dispersed throughout many Sierran foothill communities. On the Foresthill Divide, interest in maintaining traditional ways is reflected in the revival of dances, basketry skills and new construction for a ceremonial roundhouse near Todd's Valley. The Todd's Valley Miwok-Maidu Cultural Foundation has been established within the last five years and the group is in the process of gaining official tribal recognition from the U.S. government (Brown and Suehead, pers. comm., 2000). Members conduct monthly meetings. The group is committed to preserving their heritage and reestablishing their presence and traditional practices on the Divide. Plans are underway to build a roundhouse on BLM land near Foresthill. Miwok-Maidu plant managers are actively involved in harvesting plants of traditional importance and are concerned about the disappearance of oak stands with their prized acorn crop.

The Washoe remain as a recognized tribe by the U.S. government and have maintained an established land base. Its 1,200 tribal members are governed by a tribal council that consists of members of the Carson, Dresslerville, Woodfords, and Reno-Sparks Indian colonies, as well as members from non-reservation areas.

Historic Period

Gold Rush Period (1848-1859)

Earliest exploration during the Spanish and Mexican periods was limited in Placer County. It was not until later, with the growing American interest in the Trans-Mississippi West and California, that the U.S. government dispatched expeditions, such as those led by John C. Fremont, to explore

the region, produce accurate maps, and report back on the region's inhabitants and resources. Fremont's expedition of 1845-1846 traversed portions of Placer County over Donner Pass.

A similar route to that taken by Fremont, ascending the Truckee River out of Nevada, over Donner Pass, and down the west slope into the Central Valley, was opened in 1844 by members of the Stephens-Townsend-Murphy Party, the first emigrant group to cross the Sierra Nevada by wagon. Hundreds of emigrant trains soon followed, the most notable being the Donner Party. The ordeal of starvation and cannibalism, endured by their members in the winter of 1846-1847, is a well-known and tragic episode in the American settlement of the West and is now memorialized at Donner State Historic Park in adjacent Nevada County.

A few months after John Marshall's gold discovery in January of 1848 at Sutter's Mill in Coloma, Claude Chana found gold in Placer County in Auburn Ravine near Ophir. Thousands of gold seekers soon arrived, and within a few years settlements were permanently established in Placer County. The first prospecting along the Foresthill Divide was confined to the shallow placers along gravel bars and the beds of running streams where younger Quaternary stream deposits eroded the gold-bearing gravels laid down in earlier times. These shallow deposits were initially mined by a variety of simple surface hand mining techniques that involved the basic principle of agitating gold-bearing gravel in water-filled containers. Early gold extraction devices include gold pan, rocker, long tom, and sluice box. These early techniques were ultimately phased out in favor of ones that processed higher volumes of gravel. However, the sluice box continued as the standard means for extracting gold from gravels. The shallower pits and excavations and mounds of hand-piled rocks associated with these old surface washings are now largely infilled by erosion and are sometimes difficult to distinguish from natural features.

Older Tertiary Gravels, such as those formed by the ancestral American River that drained the Foresthill Divide, were laid down by slower Sierra Nevada rivers with gradual slopes. These huge deposits of ancient, loosely cemented gold-bearing gravels are more deeply buried and required more sophisticated techniques in their extraction. One method, ground sluicing, employed gravity flows of water aided by pick and shovel to break up deposits. Hydraulic mining was a more powerful form of ground sluicing, using water under pressure to dislodge and direct gold-bearing deposits into sluices where gold was trapped. "Coyoting" and later, more elaborate drift mining techniques, both employed horizontal or vertical excavations sunk into the ground to reach the gold bearing gravels. The majority of mining on the Foresthill Divide was accomplished by drift mining (a type of placer mining), using an adit and/or a shaft to reach the gold-rich ancient river channel lying deep under the ridge.

To accommodate simple mining techniques and to keep pace with the innovations of increasingly more sophisticated and powerful hydraulic methods, which demanded enormous volumes of water, an elaborate system of ditches, flumes and storage reservoirs was put in place. Financial backing requiring larger capital reserves prompted the development of ditch companies that directed their water delivery and storage facilities to major diggings. Ditches and flumes headed in high elevation reservoirs and wound their way down mountainsides.

Placer mines far outnumbered lode mines on the Foresthill Divide. In California, quartz lode mining was a less important mining technique than placer mining until after the discovery and

development of the Comstock silver mines in Nevada in 1859. The “Mother Lode” is the popular name for the main quartz vein that is associated with the intrusion of the Sierra Nevada batholith. This single lode is split into a number of seams that underlie the quartz lode region within western and central Placer County. These gold-quartz veins occur along contacts between granite and metamorphosed sedimentary rocks, volcanics and deeply weathered serpentinite. These and other hardrock sources were tapped by excavating tunnels with drills and dynamite in order to follow gold bearing quartz veins. Rock was transported out of the tunnels on ore carts and then transferred to stamp mills where the rock was crushed to release the gold ores from the surrounding material. The pulverized ore was then treated to remove impurities.

After the discovery of gold along the Foresthill Divide at Birds’ Store in 1850, communities quickly sprang up around the mines. Yankee Jim’s, Todd’s Valley, Michigan Bluff, Foresthill, and the numerous river bars along the North and Middle Forks of the American River were active mining communities during the early 1850s. By 1850, wagons traveled up onto the Divide, following old Indian trails, and pioneered the main travelway that became today’s Foresthill Road (Forest Highway 124). In the early 1850s, Foresthill became the business and transportation center of the Divide and the town survives as the only viable community.

Yankee Jim’s (California Historical Landmark 398) is important as the site of Placer County’s first hydraulic mining operation in 1853 and the site of the first mining ditch in the county (and perhaps the state) cut in 1851. The town takes its name from Yankee Jim (whose real name was reportedly Robinson), an infamous horse thief who built a corral here in 1849 to keep his horses. Yankee Jim is credited with the first gold discovery in the area. A post office was established at Yankee Jim’s in 1852. Yankee Jim’s is also renowned as the site of the first commercial orchards in Placer County. The town became an important local supplier of fruits on the Foresthill Divide. The town declined as a commercial center with the growth of nearby Foresthill and Todd’s Valley on the ridge. By 1882, with the passage of the 1882-Anti-Debris Act that curtailed hydraulic mining, the town’s populace of 3,000 had dwindled to only 150 permanent residents.

Michigan Bluff, another one of the region’s earliest mining towns, was established in 1850 (California Historical Landmark No. 402). By 1853, miners were hydraulicking the area. The mining ditches supplied water for the mines and provided the town with a reliable water supply, and the town soon became a supply center for other mining camps farther up the Divide. Leland Stanford (later to become one of the Central Pacific Railroad’s “Big Four” and subsequently Governor of California) operated a clothing store at Michigan Bluff from 1853 to 1855. The town fell into decline in 1882 when hydraulic mining was restricted.

Foresthill (California Historical Landmark No. 399) was established in the fall of 1850 by M. Fannan, James Fannan and R.S. Johnson as a small trading post. The trading post later became the town’s first “Forest House.” A post office was established here in 1859. Located on the main route along the Divide, Foresthill quickly became a center for trade and traffic to and from Michigan Bluff, Yankee Jim’s, Deadwood, Last Chance, and Westville. Gold was “accidentally” discovered within the deep river gravels below Foresthill after a landslide exposed nuggets of gold in the debris. By 1857, there were 25 drift operations in the area, most tunnels entering into the gravel deposits from the east side of the Divide. Prosperous mining companies around Foresthill included:

the Dardanelles, Jenny Lind, Northwood & Fast, the Rough and Ready, the Jersey, the Alabama, the Eagle, and the India Rubber.

Throughout this early gold rush period, logging, agriculture, and transportation were adjuncts in support of the mining industry. Many migrants who flocked to the county had no intention of working the mines, but rather of working the miners, an equally lucrative prospect with burgeoning populations needing shops and services, food and clothing, transportation and building materials. California was almost completely dependent on imported food, most coming from Oregon, Hawaii, Chile, and other Pacific-rim countries. To fill this subsistence need, disenchanted or opportunistic ex-miners secured the best farming lands in the lower foothills in Placer County to produce food for miners. Ranching of both sheep and cattle was encouraged by the increased demand for meat during the gold rush.

Sawmills immediately sprang up around mining camps to supply lumber for mine timbering and building materials for the growing settlements. The mills at Foresthill and Todd's Valley were in operation in the 1850s.

The growth of gold rush era camps and towns stimulated the development of transportation systems based on supplying mines and camps with needed mail, express and provisions. Mining camps located along the present-day Foresthill Divide were difficult to reach by foot or by wagon. Miners traveled early roads to the mines using crude wagons, pack animals, or backpacks. Freightage with wagons or transport by major express companies out of valley supply centers was not undertaken until larger-scale hydraulic mining developed in the late 1850s. With the permanence of the mining settlements insured, heavy expenditures commonly required for road building were justified. As government was unable or unwilling to finance road building, individuals or companies undertook the task and operated the thoroughfares as toll roads for profit and as a means to attract freight business into a community. As teaming became more important, the number and permanency of roadside inns increased. By the 1850s, the route along the current Forest Highway 124 was established as the main travelway between Auburn and the Foresthill Divide. The original road undoubtedly followed an earlier Native American trail.

A heterogeneous population composed of people from every corner of the world crowded into the Sierra mining districts, as reflected in the ethnic names assigned to some of the earliest camps in and along the Foresthill Divide. Native Americans played an important and little acknowledged part in the earliest period of the gold rush. Immigrants from Hawaii, Latin America, Europe, Asia, and elsewhere were initially welcomed because of their knowledge of mining techniques, but anti-foreign feelings hampered their economic opportunities in Placer County, and many groups were gradually forced out of the mines altogether into other economic pursuits. The mingling of these different ethnic groups and nationalities has produced a unique cultural collage from which the heritage of the Foresthill Divide is drawn.

Post-Gold Rush Period (1859-present)

The years following 1859 are marked by technological changes that prompted a shift in the organization and financial arrangements of the mines. Lode mining and large-scale placer mining within the county required considerable technical skill, which was dependent upon scientific

knowledge and a trained work force. The era of the self-sufficient, itinerant prospector with pick and shovel gave way to a system based increasingly on cooperation between groups of miners, and ultimately to the miner as wage earner employed by large multidivisional corporations tied to the national and world economy. National and foreign capitalists, initially investing only in mining, now poured their money into logging, transportation and water development, enterprises that paralleled mining interests. The period after 1859 can also be characterized by a change in settlement patterns, away from the “boom-bust” camp structure common to the early mining frontier, and the growth of a more mature, stable, and diversified economy and social structure that was not based on mining alone.

The beginning of this period was heralded by a downturn in the county's mining economy, as mining in the American River basins was curtailed by the exodus of miners and capitalists to the Comstock rush of 1859-1865. By the late 1860s, the Placer County mines were again productive. Until 1884, when the hydraulic mines were restrained from dumping their tailings into the streams, the largest hydraulic mines in the world were operated here, providing the county's largest source of gold.

From the turn of the century to 1917, statewide gold production rose. With the restrictions imposed on hydraulic mining, lode mining, drift mining and gold dredging supplied the principal sources of gold. Inflation following World War I caused the continual decline of gold production until the early 1930s, when the prices increased during the depression years; gold output in the state was nearly as high as it had been during the gold rush. Thousands of urban unemployed rushed to the Sierran gold fields to prospect with pan and rocker. The revival of mining infused communities along the Foresthill Divide with new life and stimulated non-mining industries such as logging and agriculture. Many mines were shut down during World War II and reopened soon afterward, but with decreasing productivity. Gradually, outside investment capital was funneled away from mining into California agriculture and real estate. The Placer County gold mining industry has not since recovered. Cement mining operations during the 1920s revived the local economy.

After the discovery of gold and silver in the Comstock in 1859, traffic was sufficiently heavy to warrant major improvements on the trans-Sierra routes. Towns in the western part of the county, in an effort to position themselves at trans-mountain road termini and obtain a share of the rapidly growing Comstock trade, established connecting roads to the major trans-Sierran routes through Placer County. The present route of Highway 124 emerged as the main travelway connecting the Foresthill Divide to Auburn and beyond. By the 1860s, Butcher Ranch became an important stage and wagon stop along this road. The community grew, with a school being established in 1878. Other way stations/ranching communities within this main travelway are the Grizzly Bear House and the 1853 United States Ranch/U.S. House (also called the “Mile Hill Toll House” and “North Star Toll House” and currently near the site of the Monte Verde Inn). These communities ceased to exist as way stations, as the automobile and truck gradually replaced the stagecoach and freight wagon.

Lumbermen commenced cutting pine to meet the needs of the western mines for timbering and flume construction. On the Foresthill Divide, sawmills date back to the early gold rush period. They tended to be smaller, generally produced for local consumption, and usually operated on a seasonal basis. The men who worked in the mill and forest were usually settled members of the community

in nearby towns. Foresthill's timber industry sustained the community after the decline of mining operations. However, the local timber industry was unable to compete with similar operations along the route of the transcontinental railroad. The onset of World War II prompted an increase in lumber production on the Foresthill Divide, as wartime demand stimulated the harvest of remaining large stands along the Divide. After the war, stands on nearby Mosquito Ridge were opened for harvest, with logs being milled in Foresthill.

As with lumber and other county industries, farm production for outside markets came after 1859 and was dependent on the development of better transportation systems. During the 1860s, settled agriculture continued in the western part of the county on farms of varying sizes. Along the Foresthill Divide, agriculture/ranching centered on the ridge tops and on orchard crops and the production of hay and seasonal stocking of cattle.

The late 19th century brought a surge of interest and appreciation of wilderness recreation, and forest lands increasingly became the relocation focus for retirees during the 20th century. The Tahoe National Forest promoted the recreational potential of its lands, which were enhanced by Civilian Conservation Corps crews between 1933 and 1943. Within the last few decades, recreational interest in the region has dramatically increased. This interest is accompanied by a rise in incoming residents who desire to live in an aesthetically pleasing and historically rich area. The enhancement and interpretation of selected historic sites and buildings have boosted community economies throughout Placer County and the Foresthill Divide in the form of recreational tourism.

The Foresthill Divide Historical Society is committed to preserving the history of the Foresthill Divide, which it believes to be a strong point for the community (Moffet, pers. comm., 2000). The unique history of the Divide, along with its recreational potential, are viewed as critical elements in the economic well being of the community and quality of life for its residents. In so doing, there is concern that future developments on the Divide are careful not to alter the historic "flavor" of old townsites. The group wishes to be consulted regarding future development issues on the Divide in order to insure preservation of remaining heritage resources and monitor new development (Percival, pers. comm., 2000). The group has an active membership and conducts regular meetings and has established an Internet web site (<http://mmoffet.mystarband.net>). Their web site averages from 20 to 40 "hits" a day, with inquiries throughout the U.S. and the world, especially from school districts. Greatest interest lies in topics involving gold mining, the gold rush, mining history, and Miwok-Maidu heritage. The society has a collection of over 800 historic photos, which are variously shown on their web site. The society is committed to sharing information regarding Foresthill Divide's past within the medium of the future, the Internet, and in so doing they provide a model for other local historical organizations to also go on-line.

The "Foresthill Divide Historic Resources Survey" (4/20/1991) was a volunteer project sponsored in part by the Foresthill Divide Historical Society. The group compiled the survey of pre-1945 structures, objects and sites as part of a community awareness program and necessary first step for the economic rejuvenation of the old commercial core of Foresthill, and to assist the County Planning Department in drafting a historic preservation component for the General Plan update. The survey compiles the major historic sites and structures located on publicly owned lands of the Foresthill Divide, with a focus on the historic townsites of Foresthill, Michigan Bluff and Yankee Jim's. Historic properties were evaluated for architectural, historical and/or cultural

significance according to the guidelines set forth in the “California Historic Resources Inventory Survey Workbook.” The Historical Society is prepared to take a position involving the preservation of certain historic structures, and may consider expanding the current historic designations within the Foresthill townsite (Percival, pers. comm., 2000).

Regulatory Framework

Summary of California Laws and Local Ordinances Protecting Heritage Resources

The integrity of the unique and varied heritage resources of Foresthill Divide is being diminished daily by natural deterioration and the processes and the pressures of growth. A variety of California laws and local ordinances have been passed in the last few decades that are designed to protect archaeological resources. Key legislation is summarized below. Several California public resource codes make it illegal to damage objects of historical or archaeological interest on public or private lands or to disturb human remains, including those in archaeological sites. It is illegal to possess remains or artifacts taken from Native American graves, and the Native American Heritage Commission must be consulted whenever Native American graves are found.

California Environmental Quality Act ("CEQA")

CEQA requires that all private and public activities not specifically exempted be evaluated against the potential for environmental damage, including effects to historical resources

Health and Safety Code, Section 7052 (Stats. 1939, C.60:672)

This code section establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

Penal Code, Section 622.5 (Stats. 1939, D.90:1605, 5.1)

This code provides misdemeanor penalties for injuring or destroying objects of historical or archaeological interest located on public or private lands. It specifically excludes the landowner.

Public Resources Code, Section 5097.5 (Stats. 1965, C.11362792)

An additional code defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historical, or paleontological resources located on public lands.

Public Resources Code, Section 5097.9

It is contrary to the free expression and exercise of Native American religion to interfere with or cause severe or irreparable damage to any Native American cemetery, place of worship, religious or ceremonial site or sacred shrine.

Health and Safety Code, Ch. 1492 (SB 297)

The Health and Safety Code requires that the Governor's Native American Heritage Commission be consulted whenever Native American graves are found. It makes it illegal to possess remains or artifacts taken from Native American graves. If human remains are discovered, all work should stop in the immediate vicinity of the find and the county coroner must be notified, according to Section 7050.5 of the Health and Safety Code. If the remains are Native American, the coroner should notify the Native American Heritage Commission, which in turn will inform a most likely descendant. The descendant will then recommend to the landowner appropriate disposition of the remains.

Public Resources Code, Sections 5024 and 5024.5

These code sections require State agencies to inventory and protect historical structures and objects under their jurisdiction. The State Historic Preservation Officer must be consulted before any such structure or object is altered or sold.

Confidentiality

In order to prevent vandalism and unauthorized artifact collecting and to protect landowners from trespass, the locations of cultural resources are kept confidential. California Government Code Section 6254.10 exempts archaeological site information from the California Public Records Act, which requires that public records be open to public inspection. Location information is restricted and is not circulated as part of public documents, but is used for planning purposes only.

Data Sources

Research entailed a general literature review of prehistoric and historic sources concerning the Plan area. A windshield survey of portions of the Plan area was conducted. No on-the-ground archaeological field survey was performed.

In order to obtain a sense of the heritage resource for the Plan area, archaeological site records, held at the Archaeological Inventory, North Central Information Center (NCIC), California State University at Sacramento (CSUS) were reviewed. The NCIC maintains records of archaeological sites inventoried in Placer County, including the Foresthill Divide. Records are available to qualified researchers for use during the land development process. Basic heritage resource inventories reviewed at this facility include: the National Register of Historic Places (through current volume); the State of California Historic Landmarks and Points of Historic Interest (through current listings); Historical, Architectural and Archaeological Resources of Placer County (12/1992); Foresthill Divide Historic Resources Survey (4/20/1991); Directory of Properties in the Historic Property Data File for Placer County (1/13/00); Survey of Surveys-A Summary of California Historical and Archaeological Research Surveys (California Department of Parks and Recreation 1989); California Office of Historic Preservation Archaeological Determinations of Eligibility for Placer County (1/28/00); and Caltrans Bridge Survey (10/31/89). Other local histories and secondary sources consulted are listed in the references cited section of Appendix D of the FDCP.

To complete this survey of archaeological site records, contacts with a variety of public and private agencies were also initiated. These included the Tahoe National Forest, U.S. Bureau of Land Management, California Department of Forestry and Fire Protection, Placer County Historical Society/Museums/Archives, Foresthill Divide Historical Society, and Placer County Planning Department. The counsel of representatives of the local Todd's Valley Miwok-Maidu Cultural Foundation and the Washoe Tribe of Nevada and California was sought, in order to determine known areas of Native American cultural ecology and history and management concerns over traditional tribal lands on the Divide. Field record reviews and telephone consultations with agency heritage resource personnel and local contacts for information regarding cultural/historical issues are listed below.

Prior Heritage Resource Investigations

Archaeological investigations on the Foresthill Divide, or in western Placer County in general, are limited. Important archaeological sites have been studied within the Highway 124 corridor and the proposed Auburn Dam Project Area. Other minor excavations have been conducted in the Tahoe National Forest at elevations generally above 3,500 feet. Recorded sites on the Divide indicate a long time sequence of use; however, there have been few excavations to provide details and in-depth information. Work by Ritter (1970) in Spring Garden Ravine for the Auburn Dam Project and by Baker (2000), Baker and Shoup (1992), and Baker et al. (1993) along Highway 124 provide important archaeological references, as they are the only excavations conducted within the Plan area.

While numerous prehistoric sites were recorded during the series of archaeological surveys for the Auburn Dam during the 1960s-1970s, all that remains are bedrock milling features, with more portable prehistoric artifacts being obliterated by gold-mining activities and natural flooding of the river canyon. A review and reorganization of the Cultural Resource Inventory for the Auburn Dam Project was undertaken for the Army Corps of Engineers, Sacramento District, in response to the newly proposed Auburn Dam alternatives requiring reassessment of the database (McCarthy 1989). Previous research efforts by Rackerby (1965), Ritter (1971), and True (1975-1980) disclosed 493 sites, of which 460 are historic and 33 are prehistoric. Findings suggest that the most important site types are ones that represent a cluster of activities and are found at settlements or named locations. Sites have been heavily impacted by flooding and mining activities. The Spring Garden Ravine site (4-Pla-S101, as referenced by Baker 2000) was investigated in 1970 as part of the heritage resource studies for the Auburn Dam. Here, a rich artifact assemblage was radiocarbon dated to approximately 3500 years ago. Middle Archaic populations may have used the site as a base camp for embarking eastward into the higher Sierra, with Late Archaic populations using the site as a seasonal hunting camp.

The California Forest Highway 124 Project, located on the Foresthill Divide between Auburn Ravine and the community of Foresthill, generated a protracted period of archaeological fieldwork conducted intermittently between 1991 and 1997 (Baker and Shoup 1992; Baker et al. 1993). The work included archaeological excavations at two sites, CA-Pla-695/H, the Monte Verde site, and CA-Pla-728/H, the Old Joe site (Baker 2000). The project provided an opportunity for some of the first in-depth archaeological investigations on the Foresthill Divide. CA-Pla-725H is the location

of the 1936 Monte Verde Inn and the former site of the 1875 Mile Hill Toll House (also known as the North Star Toll House and the U.S. Ranch). Site CA-Pla-728/H is the location of a historic marker at the south side of Foresthill Road, commemorating the location of the grave of “Old Joe,” a stage horse killed during a robbery in 1901. Excavations at the Monte Verde site, CA-Pla-695/H, revealed a well-developed midden deposit that contained numerous artifacts. Site use dates from the Early Archaic Period (prior to 3000 B.C.), but the bulk of the evidence suggests that most intensive site use occurred during the Middle Archaic Period, beginning about 2500 B.C. to 2000 B.C. and continuing to sometime between 500 B.C. and 100 B.C. The site was probably a small, permanent or semi-permanent village occupied by 40 to 70 people. Site occupation ended about A.D. 600. Excavations at CA-Pla-728/H disclosed human remains, which were removed with the approval of a Native American observer.

The Tahoe National Forest tested three prehistoric archaeological sites farther up on the Divide and outside the Plan area: the Sailor Flat Site (CA-Pla-500, Wohlgemuth 1984), the Sunflower Timber Sale Site (CA-Pla-664, Waechter 1989), and the Robinson’s Flat site (USFS 05-17-54-176, Smith 1995). These sites are located in close proximity at the 6,200 to 6,500 foot elevation, and appear to be seasonal base camps from which occasional hunting and gathering forays were made into nearby parts of the region during the Middle and Late Archaic periods.

Other excavations of relevance to the Plan area are at Bullards Bar Reservoir (Humphreys 1969), approximately 30 miles north of the Foresthill Divide, which yielded artifacts from the Middle Archaic Period. Large-scale excavations at CA-Nev-407, near Grass Valley, revealed site occupation from at least 1110 B.C. to A.D. 1500 (Clewlow et al. 1984:213).

Archaeological Coverage

No exact information on archaeological coverage is currently available. Coverage strategies, which range from complete to cursory examinations, have not been consistently presented in archaeological reports. Beyond this, archaeological coverage figures are not always reported to the North Central Information Center, unless a report was prepared by a professional archaeologist. The Plan area contains 109 square miles, or approximately 69,760 acres, about half of which are public land. It appears that nearly 100 separate archaeological surveys have been conducted on land within the Plan area. Survey has been accomplished using mixed reconnaissance strategies. The total survey area is approximately 17,067 acres, or about 25 percent of the Plan area. This coverage figure does not include work done as part of the Auburn Dam Project, where coverage area is unclear. Most of the archaeological coverage occurs on the USGS 7.5’ Foresthill Quadrangle.

Number of Surveys	Acreage	USGS Quad
7	25	Auburn
5	800	Colfax
9 + UCD Sugar Pine Reservoir study	1600	Dutch Flat
5	212	Georgetown
8	560	Greenwood
49	7760	Foresthill
11	4590	Michigan Bluff
0	1520	Westville

The USFS has conducted archaeological surveys on approximately 50,000 acres; this comprises about one-third of the land under jurisdiction of the Foresthill Ranger District. Most of this coverage is outside the Plan area.

BLM manages large blocks of land in proximity to the North Fork American River. Here, archaeological coverage has been sparse. While dozens of small inventory surveys have been conducted, few large and comprehensive studies have been completed (Decker, pers. comm., 2000).

Most archaeological work within the Plan area has been accomplished by registered professional foresters (RPF) as part of timber harvest plans (THP). The California Department of Forestry and Fire Protection (CDF) forest practice rules require RPFs to submit archaeological reports within 30 days of a THP approval (D. Foster, pers. comm., 2000). These reports are then reviewed and field inspected by CDF archaeologists, and copies of the final report are filed with the appropriate information centers (e.g., NCIC-CSUS)). Prior to 1991, RPFs may not have fully complied with the rule. Between 1995 and 1999 compliance improved. After May 1999 compliance has been complete, as CDF archaeologists send copies of approved reports directly to the information centers. RPFs are para-professional archaeologists and conduct archaeological surveys during the course of their timber stand evaluations. Consequently, the thoroughness of the ground surface inspection and the quality of reporting are variable, and reports should be evaluated on an individual basis.

Known Heritage Resource Inventory

Heritage Resource Types

The varied environmental zones, geological characteristics, and geographical position of the Foresthill Divide account for a heritage resource base that is exceedingly rich and complex. This explains the wide array of prehistoric and historic site types. Prehistoric site types that have been inventoried include villages, multi-task camps, single task-specific locales, and special use sites.

1. Village sites typically contain: (a) flaked stone tools; (b) portable milling implements such as mortars and pestles and manos and metates; (c) stationary features like bedrock mortars, which are sometimes accompanied by small-diameter pitted boulders (or “cupules”) that appear as miniature mortar cups; (d) discolored soil or “midden” which is usually deep and may contain animal bone, charcoal and organic residues; (e) house pit or dance house depressions; and (d) cemeteries.
2. Multi-task camps are not permanently occupied. They are characterized by: (a) both flaked stone and (b) ground stone tools and (c) sometimes bedrock mortars which may be associated with shallow middens or cupules.
3. Single task-specific locales are places where a single task is performed once or intermittently (seasonally) over successive years. They exhibit either flaked stone or ground stone tools. Isolated bedrock mortars with shallow middens and quarries, where rock sources were quarried and roughly fashioned into tool preforms, also fall into this category.

4. Special use sites involve: (a) petroglyphs (or rock writings); (b) hunting blinds; (c) cemeteries, (d) traditional plant collecting areas, etc.

Historic themes within the Plan area are manifest archaeologically by site types related to mining, water management, logging, transportation, and ranching/agriculture. Those sites containing evidence of habitation structures, but which cannot be directly related to any identifiable historic activity, are classed as settlement site types. These often occur in association with trash dumps and sometimes cemeteries. Historic site types that share multiple activities have been categorized according to their dominant historic theme. For example, a mining site that contains water ditches, dirt roads, remains of a habitation structure, livestock corral, garden, trash dump, and small cemetery is classified solely as a mining site.

Inventory of Heritage Resources

Little of the Plan area has been subjected to systematic survey and many more sites are likely to exist than are summarized here. To best interpret the approximate tally of the numbers and types and statuses of sites recorded within the Plan area to date, certain limitations and problems inherent in the data base need clarification. While the inventory of National Register sites and State Landmark and Points of Historical Interest designations is complete and up to date, data on the total number of sites recorded and their breakdown according to site type represents only a rough estimate of the actual extent of heritage resources inventoried. Total site numbers presented below may be underestimated. No concise database exists for Placer County. The master archaeological site inventory for the County is housed with NCIC-CSUS. Only about half of the total number of archaeological site records have been processed and received official Smithsonian numbers. The many site records that are still assigned temporary site numbers have been recorded by a number of private and public archaeologists with varying philosophies regarding what constitutes a "site." Consequently, some submitted site records may not ultimately qualify for site status. On the other hand, some resources, which should be considered sites, are treated as isolated artifacts or features, and are therefore never assigned a site number. There are a large number of informally reported isolated finds that fall into this latter category. Also, some sites, containing both a prehistoric and historic component, have not been uniformly assigned a single number, as is current practice. Consequently, some have been treated as two separate sites and have been counted twice in the tabulations presented here. Furthermore, for archaeological surveys completed decades ago, sites were not always formally reported. In addition, ground visibility on the Divide is often obscured by brush/slash, natural conditions of the landscape, fire, etc., and these physical changes can greatly hinder the detection of surface artifacts and features. For these and other reasons, the figures presented below should be considered as very rough estimates for planning purposes.

About 85 archaeological sites recorded within the Plan area have been assigned formal state trinomials by the NCIC and/or USFS. This number does not necessarily include sites inventoried on lands under the jurisdiction of the BLM. In addition, sites inventoried as part of THPs have been assigned primary numbers, but most have not been formally entered into the NCIC inventory. Sites with state trinomials and their corresponding USGS quadrangles are listed below:

Number of Sites	USGS Quad
11	Auburn
6	Colfax
10	Dutch Flat
5	Foresthill
2	Georgetown
43	Greenwood
8	Michigan Bluff

These numbers do not include the 493 sites recorded as part of the Auburn Dam project, of which 460 are historic and 33 are prehistoric. Many of these sites are within the Plan area but have not been assigned state trinomial numbers.

On adjoining USFS land, 422 sites have been recorded within the Foresthill Ranger District; most of these sites are located outside the Plan area, with only 14 falling within the Plan area. Approximately one-third of the USFS site total is prehistoric and two-thirds are historic and, within the latter category, 95 percent are associated with mining. Sites recorded on USFS lands within the Plan area and their corresponding USGS quadrangles are listed below:

The following heritage resources located within the Plan area are included in federal, state and/or local listings and inventories. Source numbers 1 through 10 are keyed to heritage property status.

1. National Register of Historic Places,
2. Archaeological Sites Determined Eligible for Inclusion on the National Register of Historic Places-California Office of Historic Preservation,
3. California Historical Landmarks,
4. California Points of Historical Interest,
5. Historic American Buildings Survey/Historic American Engineering Record,
6. Historic Highway Bridges of California-California Department of Transportation,
7. Historic Properties Directory-California Office of Historic Preservation,
8. Historic Sites Listing of the Placer County General Plan Recreation Element,
9. Five Views-California Office of Historic Preservation,
10. National Historic Civil Engineering Landmarks-American Society for Civil Engineers Sacramento Chapter.

Yankee Jim's (3,4,9)
 Town of Forest Hill (3,4,9)
 Town of Michigan Bluff (3,4,9)
 Butcher Ranch (3,4,9)
 Grizzly Bear House (3,4,9)
 Spring Garden School (3,4)
 Todd's Valley (3,4,9)
 U.S. Ranch (3,4,9)
 Baker Ranch (9)
 Bird's Valley
 Sunny South (9)
 Forks House (9)
 National Historic Trail – Michigan Bluff to Last Chance (Western States Trail)

Bridges for historical consideration within or near the Plan area as evaluated by Caltrans (Caltrans Bridge Survey 1989) include:

Bridge No.	Features Intersected	Facility Carried	Historical Significance
19C0001	North Fork American River	Old Auburn Foresthill Rd	no
19C0002	North Fork American River	Yankee Jim's Rd	yes
19C0100	Shirtail Creek	Shirtail Cny Cr Rd	no
19C0175	Sugar Pine Dam Spillway	Iowa Hill Rd	no
19C0176	North Fork American River	Iowa Hill Rd	no

California Historical Landmarks (CHL) within the Plan area include:

Yankee Jim's Townsite	CHL No. 398
Foresthill Townsite	CHL No. 399
Michigan Bluff Townsite	CHL. No. 402

The Directory of Properties in the Historic Property Data File for Placer County within the Plan area (Office of Historic Preservation 1/13/00) lists the following properties for consideration of eligibility to the National Register. Most of the properties have not been formally evaluated.

Address	Name	City	Date	*Status
Auburn Foresthill	Luster House	Foresthill	-	7
6120 Church St	Finning House	Foresthill	1860	7
Foresthill Rd	Town of Forest Hill	Foresthill	1850	7J
24469 Foresthill Rd		Foresthill	1880	7J/6Y2
24707 Foresthill Rd		Foresthill	1936	7J/6Y2
24825 Foresthill Rd		Foresthill	1900	7J
24442 Lowe St		Foresthill	1935	7J
24160 Main St		Foresthill	-	7J

24260 Main St	Red & White Store	Foresthill	1910	7J
24406 Main St	Schuyler House	Foresthill	1863	7J
24490 Main St		Foresthill	1910	7J
24500 Main St		Foresthill	1930	7J
24560 Main St	Foresthill Grocery	Foresthill	1860	7
24580 Main St	Foresthill Community Center	Foresthill	1910	7J
24590 Main St	Forest Hill Lodge	Foresthill	1947	7J
24640 Main St		Foresthill	1940	7J
24650 Main St		Foresthill	1890	7J
24680 Main St		Foresthill	1860	7J
24690 Main St		Foresthill	1890	7J
24708 Main St		Foresthill	-	7J
24750 Main St	Albrecht Store	Foresthill	1860	7J
SR49	Old Forest Hill Ranger Station	Foresthill	1934	6Y2
Yankee Jim's Rd	Yankee Jim's Rd	Foresthill	1867	7J/7L
5865 Church St		**Foresthill	-	7J
6040 Church St		**Foresthill	1930	7J
6055 Church St		**Foresthill	1901	7J
6070 Church St		**Foresthill	1930	7J
6121 Church St		**Foresthill	1900	7J
23801 Foresthill Rd		**Foresthill	1900	7J
24225 Foresthill Rd		**Foresthill	1880	7J
24245 Foresthill Rd		**Foresthill	1870	7J
24271 Foresthill Rd		**Foresthill	1870	7J
24281 Foresthill Rd		**Foresthill	1870	7J
24345 Foresthill Rd		**Foresthill	1930	7J
24407 Foresthill Rd		**Foresthill	1860	7J
24495 Foresthill Rd		**Foresthill	1920	7J
24515 Foresthill Rd		**Foresthill	1880	7J
24625 Foresthill Rd		**Foresthill	1900	7J
24645 Foresthill Rd		**Foresthill	1900	7J
24655 Foresthill Rd		**Foresthill	1900	7J
24675 Foresthill Rd		**Foresthill	1900	7J
24741 Foresthill Rd		**Foresthill	1900	7J
24781 Foresthill Rd		**Foresthill	1900	7J
24791 Foresthill Rd		**Foresthill	1900	7J
6060 Gold St		**Foresthill	1870	7J
24390 Lowe St		**Foresthill	1860	7J
24522 Lowe St		**Foresthill	1900	7J
24523 Lowe St		**Foresthill	1930	7J
8200 Michigan Bluff Rd	Michigan Bluff	**Foresthill	1850	7L
24370 Race Track St		**Foresthill	1950	7J
Yankee Jim's Rd	Suspension Bridge	**Foresthill	1930	7J
5765 Yankee Jim's Rd		**Foresthill	1880	7J
5781 Yankee Jim's Rd		**Foresthill	1920	7J
5840 Yankee Jim's Rd	Ford House	**Foresthill	1890	7J

* 6Y = determined ineligible for listing in the National Register through a consensus determination of a federal agency and the State Historic Preservation Officer; 7 = not evaluated; some properties on the above list also appear in the inventory presented in the "Historical, Architectural, and Archaeological Resources of Placer County, Volume 3" December 1992

* 7J,7L = Unevaluated properties.

** = vicinity of Foresthill

Expected Heritage Resource Sensitivity

Some idea of expected heritage resource sensitivity can serve as a general guide to advanced planning by providing a means of estimating the probable likelihood of sites occurring within a given area proposed for development. Sensitivity ratings indicate the degree of probability of finding sites in a specific project area and the relative number and types of sites expected. In this way, project sponsors can anticipate, at the outset, the extent to which heritage resources may become an issue for consideration later on.

Heritage resource sensitivity predictions for the Plan area are derived from the collective results of many archaeological surveys in similar environments throughout the region and incorporate the obvious correlation between archaeological site locations and basic environmental variables (water, level ground, etc.). In a study undertaken by the Tahoe National Forest, significant correlation was found for the major types of sites and basic environmental variables (Markley and Henton 1985). Lindström (1991) also incorporated these variables into her archaeological sensitivity model for the Nevada County General Plan Update. An assessment of archaeological sensitivity for the Plan area draws directly from these two examples.

A checklist of environmental variables influencing heritage resource sensitivity assessment is presented below. Correlation with specific environmental variables is better for prehistoric site types than for historic sites. Historic activities, particularly mining, involved intensive use of specific locations with little reliance or dependence on local resources for subsistence or other economic needs.

I. Environmental Variables

A. Topography

1. Elevation (600 to 4800 feet)
2. Percent slope (0-30%; 30-50%; 50+%)
3. Aspect (north; south; east; west)
4. Proximity to water (less than 1/4 mile; greater than 1/4 mile)
5. Water Type
 - a. Stream (intermittent, permanent)
 - b. Spring
6. Soils (agriculture/timber productive)/Geology (mineral deposits; quarry sources)

B. Flora (oak-grassland; hardwood/conifer; conifer; meadow; community ecotone)

C. Fauna

1. Deer Range
2. Fishery

II. Other Considerations

- A. Ethnographic/historic data that document past land use
- B. Previously recorded sites
- C. Recent/historic land modifications and disturbance

Native American Prehistory and History

For both the Nisenan and Washoe, territories encompassed wide-ranging elevations and varied environmental zones. Intense gathering was most effectively carried out in the grassland and oak woodland zone below 3,000 feet, where winter villages were located. Single task-specific locales, from which a multitude of plant and animal resources were procured, are found in higher numbers in proximity to winter villages. Cemeteries are generally restricted to the winter village area. Elevations above 3,000 feet on the west slope are beyond the range of permanent occupation but are moderately to highly sensitive to contain seasonal multi-task camps, single task-specific locales, petroglyphs and hunting blinds. Level ground is a basic determinant for any prehistoric habitation. Areas with greater than 30 percent slope may accommodate some specific short-term tasks and hunting blinds. Petroglyphs generally occur on large horizontal bedrock outcrops.

Southern and eastern exposure was generally advantageous for warmth and protection from storms.

Villages are dependent upon a permanent water source. Seasonal multi-task camps occur around springs and along intermittent streams during their periods of flow. Camps along streams are most likely to occur at the confluence of a major creek flowing down from the ridge, thereby providing an access corridor up to the ridge.

Geological variables are centered upon rock sources used in fashioning stone tools; namely, metasediments that contain chert outcrops and volcanic flows which are comprised of basalt. Granite was favored for milling equipment. Horizontal smooth surfaces of granite or metasediments were preferred for petroglyphs.

The floral component is important in the prediction of prehistoric site locations, in that plant resources made up a significant percentage of the subsistence base of the aboriginal inhabitants of the county. Elevation and microenvironmental diversity enhanced the rich and varied seasonal resources that were regularly available for human use. However, past plant and animal communities were different both in make-up and distribution than those found today. Changes are due to historic impacts associated with mining, logging and grazing, to the introduction of non-native plant species, and to the cessation of regular aboriginal burning, which was practiced to improve the vigor of plant resources. The pine forests, particularly in the purely coniferous areas, were not as productive for aboriginal exploitation as were areas containing hardwoods (especially oaks) and a wide variety of brush and grass species. Ecotones, where plants were procured from the junctions of two or more vegetation communities, were the most productive and efficient zones. Areas corresponding to more diversified plant species are designated as highly sensitive.

Animal resources, including large and small mammals, a variety of avifauna, large anadromous fish (salmon and steelhead trout), and smaller suckers and minnows, were significant food items. Deer herds are migratory, wintering in the major river canyons and moving upslope in elevation in the

spring (a pattern not unlike that practiced by the Nisenan and Washoe). Zones that accommodate deer migration routes and winter ranges or support productive fisheries are highly sensitive.

Disturbed areas are less likely to contain sites that are intact and may be less sensitive. Areas containing known heritage resources for which there is some type of formal record are, of course, extremely sensitive. Heritage resource sensitivity goes beyond the archaeological record. Both the Maidu/Miwok and the Washoe have expressed a concerted interest in maintaining access to traditional lands upon which important medicinal and food plants continue to thrive.

A checklist of variables influencing prehistoric resource sensitivity is presented below. Prehistoric site types are abbreviated: V=village; MT=multi-task site; ST=single task-specific site; SU=special use; C=cemetery; HB=hunting blind; and P=petroglyph.

Variable	Predicted Site Type	Sensitivity Level
Elevation:		
600-3000	V/MT/ST/SU-C	high
3000-4800	MT/ST/SU-P,HB	moderate
Percent slope:		
0-30%	V/MT/ST/SU-C,P	high
30-50%	ST/SU-HB	moderate
50%+	ST/SU-HB	high-low
Aspect:		
Southern	V/MT/ST	high
Eastern	V/MT/ST	high
Western	V/MT/ST	moderate
Northern	MT/ST	high-low
Proximity to water:		
less than 1/4 mile	V/MT/ST	high
greater than 1/4 mile	ST	high-low
Water type:		
Stream – permanent	V/MT/ST	high
Stream – intermittent	MT/ST	moderate
Spring	V/MT/ST	high
Geology:		
Chert/metasediment outcrops	ST	high
Large, flat granite/ metasedimentary surface	SU-P	high

Flora:

Oak grassland	V/MT/ST/SU-C	high
Hardwood/conifer	MT/ST	high
Conifer	ST	mod-low
Meadow	V/MT/ST	high
Ecotone	V/MT/ST	high

Fauna:

Deer range	V/MT/ST/SU-HB, P	high-mod
Fishery	V/MT/ST	high-mod

Other:

Ethnographic/historic documented land use	V/MT/ST/SU-C, HB, P	high
Previously recorded sites	V/MT/ST/SU-C, HB, P	high
Recent land modifications		
Undisturbed	V/MT/ST/SU-C, HB, P	high
Disturbed	V/MT/ST/SU-C, HB, P	mod-low

Euroamerican History

Historic site locations are much less dependent upon environmental variables and correlation is less direct. Prehistoric and historic sites tend to be distributed differently, at least with regards to elevation. Lower elevations have a consistently higher than average density of historic sites, with mining sites generally located below 5,000 feet.

Geological data are key to predicting historic mining sites. All areas which fall within zones containing: (1) deposits formed by hydrothermal processes, e.g. gold, silver, copper, zinc; (2) placer gold deposits; (3) industrial mineral deposits, e.g. barite, clay, and silica; (4) sand and gravel resources of alluvial and glacial origin; and (5) crushed stone resources consisting of metamorphic and volcanic rocks are highly sensitive. Other important independent variables include steep slopes and the presence of water. The positive correlation with water is to be expected, since many of the placer deposits are located near streams and rivers. The correlation with steeper slopes is also not surprising, as many of the mining sites are either located in the bottom of steep drainages or on canyon sides where rivers have cut through the gold-bearing deposits. Water management activities are initially tied to water, with sources generally at higher elevations. The correlation between ditches and flumes and environmental variables ends there, however, except for a preference for slopes with southern exposure.

Transportation routes are relatively free of environmental constraints. While more moderate terrain was favored, steep slopes were still traversed. The main road along the ridge of the Divide, along with intersecting road systems, is considered to be the major sensitive transportation corridor within the Plan area.

Logging is tied to a forest vegetation type and the productivity of soils. More moderate slopes, sunny exposures and the presence of water are important considerations in historic logging camp locations.

Ranching/grazing activities are tied to elevation and soil productivity. The main constraints on historic agricultural activities were elevations below the frost zone and relatively level terrain. Although the Foresthill Divide is not considered a major agricultural area, ranches along the ridge supported localized crops of fruits, and vegetables and hay. Ranching activities required water and sufficient feed for livestock and somewhat level terrain. Associated archaeological sites most closely conform to the combination of environmental variables requisite for prehistoric sites (level spots near water, etc.). Historic settlement is less dependent upon environmental variables than is prehistoric settlement. The need for level ground for habitation was overcome by artificial terracing. Water was brought in by ditch or flume and foodstuffs and supplies were transported to the living site.

Disturbed areas are less likely to contain sites that are intact and may be less sensitive. Areas containing known heritage resources for which there is some type of formal record are, of course, extremely sensitive.

A checklist of variables influencing historic resource sensitivity follows. Historic site types and their abbreviations include: M=mining; S-D=settlement site with dump; W=water management; L=logging; T=transportation; C=cemetery; R-A=ranching and agriculture; and G=grazing.

Variable	Predicted Site Type	Sensitivity Level
Elevation:		
600-4800	M/S-D/W/T/C	high
600-3000	M/S-D/W/T/C/R-A	high
3000-4800	M/S-D/W/L/T/C/G	high
Percent slope:		
0-30%	M/S-D/W/L/T/C/R-A/G	high
30-50%	M/W/L/T	high
50%+	M	high
50%+	W/L/T	moderate
Aspect:		
Southern	S-D/W	high
Proximity to water:		
less than 1/4 mile	M/S-D/W/L/R-A/G	high
greater than 1/4 mile	M/S-D/R-A/G	mod-low
Water type:		
Stream – permanent	M/S-D/W/R-A/G	high
Stream – intermittent	M/S-D/W/R-A/G	mod
Spring	S-D/R-A/G	high

Geology/soils:		
Mineral bearing deposits	M/S-D/W	high
Productive soils	L/S-D/R-A/G	high
Flora/Fauna:		
Oak-grassland	S-D/W/R-A/G	high
Hardwood/conifer	L	moderate
Conifer	L	high
Meadow	R-A/G	high
Other:		
Historic documentation of land use	M/S-D/W/L/T/C/R-A/G	high
Previously recorded sites	M/S-D/W/L/T/C/R-A/G	high
Recent land modifications		
Undisturbed	M/S-D/W/L/T/C/R-A/G	high
Disturbed	M/S-D/W/L/T/C/R-A/G	mod-low

GOALS AND POLICIES

Placer County General Plan Policies

Recreational and Cultural Resources

- 5.D.3. The County shall solicit the views of the Native American Heritage Commission and/or the local Native American community in cases where development may result in disturbance to sites containing evidence of Native American activity and/or to sites of cultural importance.
- 5.D.6. The County shall require that discretionary development projects identify and protect from damage, destruction, and abuse, important historical, archaeological, paleontological, and cultural sites and their contributing environment. Such assessments shall be incorporated into a countywide cultural resource data base, to be maintained by the Department of Museums.
- 5.D.7. The County shall require that discretionary development projects are designed to avoid potential impacts to significant paleontological or cultural resources whenever possible. Unavoidable impacts, whenever possible, shall be reduced to a less than significant level and/or shall be mitigated by extracting maximum recoverable data. Determinations of impacts, significance, and mitigation shall be made by qualified archaeological (in consultation with recognized local Native American groups), historical, or paleontological consultants, depending on the type of resource in question.

Foresthill General Plan Goals and Policies

Cultural Resources

Goal 1: To preserve and enhance all significant historic and archeological sites and features.

1. Identify and protect from destruction and abuse all representative and unique sites.

Foresthill Divide Community Plan Goals and Policies

The proposed FDCP includes the following goals and policies related to cultural resources:

Goal 4.B.1. Identify, protect, record and enhance the Divide's important historical, archaeological, and cultural sites and their contributing environment.

Policies

- 4.B.1-1 Assist the residents of Foresthill in becoming active guardians of their community's cultural resources.
- 4.B.1-2 The County and the community shall preserve the historical character of the Core Area of Foresthill.
- 4.B.1-3 Encourage all agencies and groups (USFS, Placer County, Historical Society) to preserve, record and mark sites and artifacts of local importance (such as Startown, Damascus, Sunny South, Red Star, Miller's Defeat).
- 4.B.1-4 Solicit the cooperation of the owners of cultural resources, encourage those owners to treat these resources as assets rather than liabilities, and encourage the support of the general public for the preservation and enhancement of these resources.
- 4.B.1-5 Solicit the views of the Native American Heritage Commission and/or the local Native American community in cases where development may result in disturbance to sites containing evidence of Native American activity and/or to sites of cultural importance.
- 4.B.1-6 Use, where feasible, incentive programs to assist private property owners in preserving and enhancing cultural resources.
- 4.B.1-7 Require that discretionary development projects identify and protect from damage, destruction, and abuse, important historical, archaeological, and cultural sites and their contributing environment. Such assessments shall be incorporated into a countywide cultural resource data base, to be maintained by the Department of Museums.
- 4.B.1-8 Existing large trees or groves of historic and/or cultural significance (i.e., weather tree in Michigan Bluff, cork oaks on Todd Valley Road, Finning Tree off Finning Mill Road, Fork's House Grove, Harold T. "Bizz" Johnson Tree) should be identified and protected to the best of the County's ability. Trees so identified should only be removed as a last resort.
- 4.B.1-9 Areas of potential archaeological sensitivity shall be identified and catalogued by Placer County. Proposed development or public works projects within this area shall be required to undertake an archaeological survey prior to project approval. Proposed projects outside this area, in locations that have not been significantly disturbed, shall be referred to the California Archaeological Inventory, Northern Information Center, California State University, Sacramento for review and comment, and shall be required to undertake an archaeological survey prior to project approval upon recommendation by the Center.
- 4.B.1-10 The County shall, within its power, maintain confidentiality regarding the locations of archaeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts.
- 4.B.1-11 The County shall use the State *Historic Building Code* to encourage the preservation of historic structures.

- 4.B.1-12 The County shall support the registration of cultural resources in appropriate landmark designations (i.e., National Register of Historic Places, California Historical Landmarks, Points of Historical Interest, or Local Landmark). The County shall assist private citizens seeking these designations for their property.
- 4.B.1-13 The County shall consider acquisition programs as a means of preserving significant cultural resources that are not suitable for private development. Organizations that could provide assistance in this area include, but are not limited to, the Archaeological Conservancy, The Nature Conservancy and the Placer Land Trust.
- 4.B.1-14 The County shall require that the subdivision of property containing existing features of cultural or aesthetic merit be carefully designed to preserve these structures and, where appropriate, utilize them as a focal point of neighborhood design.
- 4.B.1-15 The County shall make the protection of significant cultural resources a priority over recordation and/or destruction.
- Goal 4.B.2. Encourage the continued provision of a wide variety of cultural activities that contribute to the appeal of the Foresthill area.**

Policies

- 4.B.2-1 The County shall encourage the development of multipurpose facilities which can function as recreational sites, open space areas and for historic, cultural, and archaeological preservation.
- 4.B.2-2 The use of the Foresthill Museum as a repository of historical artifacts on the Divide shall be encouraged.

3.7.3 IMPACT EVALUATION CRITERIA

Under the California Environmental Quality Act (CEQA), historical resources are recognized as a part of the environment (Public Resources Code 21001(b), 21083.2, 21084(e), 21084.1). A “historical resource” includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript that is historically or archaeologically significant, or important in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California (Public Resources Code 5021.1).

In 1992, the Public Resources Code was amended as it affects historical resources. The amendments included creation of the California Register of Historical Resources (Public Resources Code 5020.4, 5024.1 and 5024.6). While the amendments became effective in 1993, it was not until January 1, 1998, that the implementing regulations for the California Register were officially adopted (Public Resources Code 4850 *et seq.*).

The California Register is an authoritative listing and guide for state and local agencies and private groups and citizens in identifying historical resources. This listing and guide indicates which resources should be protected from substantial adverse change. The California Register includes historical resources that are listed automatically by virtue of their appearance on or eligibility for certain other lists of important resources. The Register includes historical resources that have been nominated by application and listed after public hearing. Also included are

historical resources listed as a result of an evaluation by specific criteria and procedures adopted by the State Historical Resource Commission.

The criteria used for determining the eligibility of a cultural resource for the California Register are similar to those developed by the National Park Service for the National Register of Historic Places. However, criteria of eligibility for the California Register were reworded to better reflect California history.

Any building, site, structure, object or historic district meeting one or more of the following criteria may be eligible for listing in the California Register:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;
2. It is associated with the lives of persons important to local, California, or national history;
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

Eligibility for the California Register also depends on the integrity, or the survival of characteristics of the resource that existed during its period of significance. Eligible historic resources must not only meet one of the above criteria, but also they must retain enough of their historic character or appearance to convey the reasons for their importance, or retain the potential to yield significant scientific or historical information or specific data.

Like the process of evaluating historical resources for National Register eligibility, California Register evaluations include the consideration of seven aspects of integrity: location, design, setting, materials, workmanship, feeling and association. The evaluation of integrity must be judged with reference to the particular criterion or criteria under which a resource may be eligible for the California Register. However, the implementing regulations specifically caution that alterations of a historic resource over time may themselves have historical, cultural or architectural significance.

Most often, historical resources eligible for the California Register will be 50 years old or older. However, the new implementing regulations stipulate that "a resource less than fifty (50) years old may be considered for listing in the California Register if it can be demonstrated that sufficient time has passed to understand its historical importance."

If an archaeological resource does not meet the definition of a "historical resource," it may meet the definition of a "unique archaeological resource" under Public Resources Code Section 21083.2. An archaeological resource is "unique" if it:

1. Is associated with an event or person of recognized significance in California or American history or recognized scientific importance in prehistory;
2. Can provide information that is of demonstrable public interest and is useful in addressing scientifically consequential and reasonable research questions;
3. Has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind;
4. Is at least 100 years old and possesses substantial stratigraphic integrity;
5. Involves important research questions that historical research has shown can be answered only with archaeological methods.

Public Resources Code Section 21098.1 stipulates that a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment. "Substantial adverse change" means demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired.

Any project that involves federal undertakings, lands, funds, or permits must comply with Section 106 of the National Historic Preservation Act (NHPA; amended 1999); this Act defines important ("*significant*") resources as those listed on, or eligible for listing on, the National Register of Historic Places. Section 106 and its implementing regulations require federal agencies to provide the Advisory Council on Historic Preservation an opportunity to comment on actions that will affect historic properties. National Register criteria define an important cultural resource as one that is associated with important persons or events, or that embodies high artistic or architectural values, or that has scientific value (36 CFR 60.6). Where a cultural resource has not been evaluated for its importance, it is treated as potentially important until an evaluation can be done.

According to CEQA Guidelines Sections 15064.5 and 15126, a project is considered to have significant impacts if it will disrupt or adversely affect a prehistoric or historic archaeological site or a property of historic or cultural significance to a community or ethnic or social group or a paleontological site. Based on this guideline, the proposed FDCP was considered to have a significant impact if it resulted in:

- Damage or destruction of any significant prehistoric or historic properties;
- Neglect of a property resulting in its deterioration or destruction; or
- Damage or destruction of any unrecorded archaeological sites or features.

3.7.4 IMPACTS AND MITIGATION MEASURES

Impact 3.7-1 Direct impacts on prehistoric and historic sites within the Plan area due to ground-disturbing activities associated with development in accordance with the FDCP.

Discussion/Conclusion: No specific, direct impacts have been identified that are associated with adoption of the FDCP. However, future ground-disturbing activities on individual project sites may disturb or destroy cultural resources. The proposed FDCP includes goals and policies that address preservation of historical, archaeological, and cultural sites and their contributing environment.

The FDCP Heritage Resource Element prepared by Susan Lindstrom, Ph.D., Consulting Archaeologist, concludes that no specific mitigation measures are necessary at this time. It further states:

All locales within the FDCP area destined for future development should be subject to a detailed heritage resource analysis at the project specific stage. Such study should involve the required record search at NCIC, archival research, an archaeological field reconnaissance, pertinent architectural evaluations, and consultations with appropriate federal, state and local agencies and representatives of the Native American community. If resources exist, the criteria for significance should be applied and, if necessary, appropriate mitigation measures developed. Mitigation measures may involve additional archaeological investigations and include incorporation of the heritage resource into the project plan as interpretive features. In particular, the archaeological remains left by ancestral Native Americans require respectful treatment, along with the continued incorporation of contemporary Native American opinions, knowledge and sentiments into the planning process. Placer County should maintain the confidentiality of heritage site locations and provide heritage resource management guidance to development interests, so that developers can be informed of the sensitivity of the plan area and be prepared to budget for heritage resource studies at the earliest stages of project-specific planning.

The recommendations of the consulting archaeologist have been incorporated in the goals, policies and implementation measures of the proposed FDCP. This impact is *less than significant*.

Mitigation Measures

With incorporation of the goals, policies and implementation measures of the FDCP, no mitigation measures are required.

Discussion/Conclusion with Incorporation of the Forest Ranch Concept Plan: Several potential project-related effects are likely to occur within the project site. These impacts may result from the disturbance or destruction of prehistoric or historic archaeological sites during ground-disturbing activities and/or general changes in land use that may affect the integrity of the setting of heritage properties by introducing incompatible visual or audible elements into the setting of a significant resource. Indirect impacts such as vandalism may result due to increased public access into an area containing a site. These impacts are *potentially significant*.

Implementation of the following mitigation measures will reduce impacts on cultural resources to a *less than significant level*:

- 3.7-1a *Archaeological field surveys shall be conducted by professional archaeologists prior to approval of tentative maps or ground disturbing activities within the Forest Ranch Concept Plan area in accordance with the Forest Ranch Specific Plan Development Standards 2E.1-1 through 2E.1-3. If no archaeological resources are identified onsite, Mitigation Measures 3.7-1b through 3.7-1d shall not be required.*
- 3.7-1b *Prior to modification or destruction of an identified archaeological site within the Forest Ranch Concept Plan area, field-related mitigation activities shall be implemented in consultation with appropriate federal, state and local agencies and Native American groups. Mitigation measures can include project modification designed to protect and/or avoid a site. In lieu of project modification, a data recovery program can involve archival research, photo documentation and mapping, removal of a historic feature, collection of artifacts, recordation of features, test excavations, larger scale excavations, or some combination of these tasks, consistent with Section 15126.4 of the CEQA Guidelines. Interpretive development of heritage remains enhances resource protection, public education and enjoyment and may also be used as mitigation.*

Impact 3.7-2 Indirect impact on prehistoric and historic sites in the Plan area due to increased public access into an area containing a site, which could result in vandalism. Indirect impacts that could occur if development introduces incompatible visual or audible elements into the setting of a significant resource.

Discussion/Conclusion: The FDCP Heritage Resource Element notes that the latter impact (introduction of incompatible visual or audible elements) is especially critical in the case of historic structures. As noted under Impact 3.7 discussion above, the proposed FDCP includes Policy 4.B.1-10 requiring the County to maintain confidentiality regarding the locations of archaeological sites to protect and preserve these resources from vandalism and the unauthorized removal of artifacts. Any new trails developed pursuant to adoption of the FDCP will be subject to the Plan policy (4.B.1-9) that requires public works projects to protect areas of archaeological sensitivity. The proposed FDCP also includes policies to preserve the historical character of Foresthill; to preserve and enhance cultural resources; and to require that discretionary development projects identify important historical, archaeological and cultural sites and protect them from damage, destruction and abuse. Because the potential indirect impacts are addressed in the FDCP, these impacts are *less than significant*.

Mitigation Measures

With incorporation of the goals, policies and implementation measures of the FDCP, no mitigation measures are required.

Discussion/Conclusion with Incorporation of the Forest Ranch Concept Plan: The project site contains resources of traditional value to contemporary Native Americans. Access to traditional plants and related materials has become an increasing concern as more development displaces natural resource gathering areas of importance to contemporary Native Americans. During the on-site tour, a number of native plants of importance to Maidu and Miwok plant specialists were identified (acorn, willow, mushrooms, hazelnut, etc.). Harvest and management of these plants are important to maintaining traditional subsistence and utilitarian practices. Members of the Todd's Valley Miwok-Maidu Cultural Foundation are concerned about the environment and the future of the Foresthill Divide. They want to preserve their traditional cultural knowledge, ancestral prehistoric sites, and native plant and animal resources. Access into portions of the project site is important to accomplish these goals. These impacts are *potentially significant*.

Implementation of the following measures will reduce impacts on natural resources of importance to contemporary Native Americans to a *less than significant level*:

- 3.7-2a *As part of an effort to sustain traditional cultural practices, portions of the Forest Ranch Concept Plan site that could be set aside for the harvest and management of traditional plants by Maidu and Miwok traditionalists and agreement for access shall be investigated. If indicated by the studies, future tentative maps shall include dedicated easements or other mechanism to allow access. Additional work shall involve an ethnobotanical survey, combining the skills of a project ethnobotanist and a Native American plant specialist, to locate and document traditional plant populations and to identify attributes sought and cultured by Maidu and Miwok collectors.*
- 3.7-2b *To insure the integrity of traditional plant resources and enhance their Native management, issues such as the application of herbicides, controlled burning, and dust abatement.*

3.8 AIR QUALITY

3.8.1 INTRODUCTION

Ambient air quality is generally determined by climatological conditions, the topography of the air basin, and the type and amount of pollutants emitted. The FDCP area is subject to a combination of topographical and climatic factors, which result in the potential for regional and local pollutant accumulation. The following discussion describes relevant characteristics of the air basin, and provides an overview of physical conditions affecting pollutant accumulation and dispersion in the Plan area. The Air Quality Setting also describes the sources, types, and health effects of major air pollutants. Technical materials are included as Appendix I of this EIR.

The air quality analysis was prepared by Donald Ballanti, Certified Consulting Meteorologist, and Joseph O'Bannon.

3.8.2 SETTING

PURPOSE

Air quality is an important resource in the Foresthill Divide Community Plan area. Clean, fresh air is one of the features that attract people to live in rural areas such as the Foresthill Divide. The Plan area is less subject to severe inversion conditions in the winter months than other Placer County communities. The ridge top location of most development avoids the effects of strong inversions in winter that affect communities located in valleys. The Plan area is adversely affected by the transport of ozone into the local air basin from areas to the west into an area that would otherwise be fairly pristine. The purpose of the Air Quality section is to underscore the importance of air quality to Plan area residents, and to assure that all feasible actions are taken in the Plan area to maintain and improve air quality. Improving air quality in other regions is outside the jurisdiction of Placer County.

DISCUSSION

Climate and Meteorology

This section examines the climatic influences that affect air quality of the Foresthill Divide Community Plan area and describes available data on measured contaminant levels near the Plan area. It outlines the regulatory and planning agencies and programs that must be reflected in the Foresthill Divide Community Plan.

Climatic factors that affect air quality near the Plan area are wind and atmospheric stability. The daytime wind direction is generally westerly, which is the result of up-river breezes typical in mountainous terrain. During the nighttime, down-river "drainage" flows are frequent, particularly in winter. These nighttime winds are generally light, and follow the watercourse in a downstream direction.

Atmospheric stability is a measure of the atmosphere's ability to vertically dilute pollutants. When the atmosphere is very stable (i.e., inversion conditions), pollutants may accumulate within a shallow layer near the ground, with resulting poor air quality. In the Plan area, these conditions are most likely to occur in winter.

Potential air quality problems near the Plan area are directly related to climatic factors. During the summer months, the general wind circulation has the potential to transport ozone from the adjacent Sacramento Valley Air Basin into the Plan area, and Particulate Matter 10 microns or less in diameter (PM₁₀) concentrations can be elevated by local burning, controlled burns and forest fires. During the winter months, more localized problems can arise when PM₁₀ emissions from wood burning have the potential to accumulate under inversion conditions.

Existing Air Quality

Criteria Air Pollutants

This section describes the pollutants of greatest importance in the Foresthill Divide Community Plan vicinity. It provides a description of the physical properties, the health and other effects of the pollutant, and the sources of the pollutant.

Both the U.S. Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants that represent safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. Table 3.8-1 describes the major pollutants including the characteristics, health effects and major sources of the pollutants.

Table 3.8-1 Major Criteria Pollutants

Pollutant	Characteristics	Health Effects	Major Sources
Ozone	A highly reactive photochemical pollutant created by the action of sunshine on ozone precursors (primarily reactive hydrocarbons and oxides of nitrogen.) Often called photochemical smog.	<ul style="list-style-type: none"> • Eye Irritation • Respiratory function impairment 	The major sources of ozone precursors are combustion sources such as factories and automobiles, and evaporation of solvents and fuels.
Carbon Monoxide	Carbon monoxide is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels.	<ul style="list-style-type: none"> • Impairment of oxygen transport in the bloodstream. • Aggravation of cardiovascular disease. • Fatigue, headache, confusion, dizziness. • Can be fatal in the 	Automobile exhaust, combustion of fuels, combustion of wood in woodstoves and fireplaces.

Pollutant	Characteristics	Health Effects	Major Sources
		case of very high concentrations	
Nitrogen Dioxide	Reddish-brown gas that discolors the air, formed during combustion.	<ul style="list-style-type: none"> Increased risk of acute and chronic respiratory disease. 	Automobile and diesel truck exhaust, industrial processes, fossil-fueled power plants.
Sulfur Dioxide	Sulfur dioxide is a colorless gas with a pungent, irritating odor.	<ul style="list-style-type: none"> Aggravation of chronic obstruction lung disease. Increased risk of acute and chronic respiratory disease. 	Diesel vehicle exhaust, oil-powered power plants, industrial processes.
PM ₁₀	Solid and liquid particles of dust, soot, aerosols and other matter which are small enough to remain suspended in the air for a long period of time.	<ul style="list-style-type: none"> Aggravation of chronic disease and heart/lung disease symptoms. 	Combustion, automobiles, field burning, factories and unpaved roads. Also a result of photochemical processes.

Source: Donald Ballanti, Certified Consulting Meteorologist, 2000; Quad Knopf 2006

The federal and California state ambient air quality standards are summarized in Table 3.8-2 for important pollutants. The federal and state ambient standards were developed independently with differing purposes and methods, although both processes attempted to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is particularly true for ozone and particulates (PM₁₀). In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated. The identification, regulation and monitoring of TACs is relatively recent compared to criteria pollutants.

Table 3.8-2 Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standard	State Standard
Ozone	1-Hour	--	0.09 ppm
	8-Hour	0.08 ppm	0.070 ppm
Carbon Monoxide	8-Hour	9.0 ppm	9.0 ppm
	1-Hour	35.0 ppm	20.0 ppm
Nitrogen Dioxide	Annual	0.05 ppm	--
	1-Hour	--	0.25 ppm
PM ₁₀	Annual	--	20 µ/m ³
	24-Hour	150 µ/m ³	50 µ/m ³
PM _{2.5}	Annual	15 µ/m ³	12 µ/m ³
	24-Hour	35 µ/m ³	--

ppm = parts per million

µ/m³ = Micrograms per Cubic Meter

Source: California Air Resources Board, Ambient Air Quality Standards (11/10/06)

Ambient Air Quality

The Placer County Air Pollution Control District (PCAPCD) operates air quality monitoring sites in nearby Colfax and Auburn measuring ozone and PM₁₀. Data from these monitoring sites is summarized in Table 3.8-3. Table 3.8-3 shows that the state and federal ozone standards are not met in the vicinity of the Plan area, primarily due to transport of ozone into the area from the greater Sacramento area. PM₁₀ air quality meets federal and state standards at both monitoring sites.

Table 3.8-3 Summary of Air Quality Data for Colfax and Auburn, 2003-2005

Pollutant	Standard	Year	Days Exceeding Standard in Colfax	Days Exceeding Standard in Auburn
Ozone	1-Hour State	2005	18	11
		2004	12	14
		2003	13	14
Ozone	1- Hour Federal	2005	1	0
		2004	0	0
		2003	0	0
Ozone	8-Hour Federal	2005	13	10
		2004	9	12
		2003	12	11
PM ₁₀	24-Hour State	2005	0	0
		2004	0	0
		2003	0	0
PM ₁₀	24-Hour Federal	2005	0	0
		2004	0	0
		2003	0	0

--There was insufficient (or no) data available to determine the value.

Source: California Air Resources Board, APCD, 2006.

Existing Emission Sources

The Plan area contains few industrial sources of pollution. Major emission sources in the Plan area are motor vehicles, open burning, and residential wood burning. Unpaved roads, lumbering operations and construction activities contribute to the level of PM₁₀.

Regulatory Framework for Air Quality

Federal. At the federal level, the EPA has been charged with implementing national air quality programs. The EPA's air quality mandates are drawn primarily from the Federal Clean Air Act (FCAA). The President first signed the FCAA into law in 1970. The Act was substantially amended in 1977 and again in 1990.

State/Local. The CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California, and for implementing its own air quality legislation called the California Clean Air Act (CCAA), adopted in 1988. The CARB has

primary responsibility in California to develop and implement air pollution control plans designed to achieve and maintain the NAAQS established by the EPA.

In addition, states may establish their own standards, provided the state standards are at least as stringent as the NAAQS. California has established California Ambient Air Quality Standards (CAAQS) pursuant to California Health and Safety Code §39606(b), and its predecessor statutes.

Air quality in the Foresthill area is regulated by several agencies including EPA, CARB, and the Placer County APCD. Each of these agencies develops rules and/or regulations to attain various air quality goals. Although EPA regulations may not be superseded, both State and local regulations may be more stringent than federal air quality regulations. In general, state and federal agencies are responsible for regulating emissions from on-road and off-road vehicles and establishing air quality standards. Local air districts are responsible for implementing state and federal air quality regulations, permitting stationary sources of air pollution, and developing plans aimed at attaining ambient air quality standards. Emissions from indirect sources, such as automobile traffic associated with development projects, are addressed through local air districts' air quality plans.

The Placer County APCD is responsible for regulation and permitting of stationary sources and some area sources of pollution. The District monitors air quality and is responsible for preparation of regional air quality plans.

Air quality is sometimes regulated on a county-by-county basis and sometimes on a regional (e.g., basin-wide) basis. This distinction is particularly relevant in Placer County, which spans three air basins in California: the southwestern third of the county lies within the Sacramento Valley Air Basin (SVAB), the northernmost portion of Placer County is within the Lake Tahoe Air Basin (LTAB), and the remainder is within the Mountain Counties Air Basin (MCAB). The Forest Divide Community Plan area is in the portion of Placer County that is part of the MCAB, but is in close proximity to the SVAB.

Regional Air Quality Planning

Both the federal and state governments have enacted laws mandating the identification of areas not meeting the ambient air quality standards and development of regional air quality plans to eventually attain the standards. Under the federal Clean Air Act, Placer County is considered "unclassified" or "attainment" for all pollutants except ozone. For the state standards, Placer County is "non-attainment" for PM₁₀ and ozone, and either "attainment" or "unclassified" for other pollutants. The designation with respect to ozone stipulates that the MCAB portion of Placer County is affected by ozone transported from upwind air basin.

GOALS AND POLICIES

Placer County General Plan Policies

Air Quality

- 6.F.3. The County shall support the Placer County Air Pollution Control District (PCAPCD) in its development of improved ambient air quality monitoring capabilities and the establishment of standards, thresholds, and rules to more adequately address the air quality impacts of new development.
- 6.F.4. The County shall solicit and consider comments from local and regional agencies on proposed projects that may affect regional air quality.
- 6.F.5. The County shall encourage project proponents to consult early in the planning process with the County regarding the applicability of countywide indirect and areawide source programs and transportation control measures (TCM) programs. Project review shall also address energy-efficient building and site designs and proper storage, use, and disposal of hazardous materials.
- 6.F.6. The County shall require project-level environmental review to include identification of potential air quality impacts and designation of design and other appropriate mitigation measures or offset fees to reduce impacts. The County shall dedicate staff to work with project proponents and other agencies in identifying, ensuring the implementation of, and monitoring the success of mitigation measures.
- 6.F.7. The County shall encourage development to be located and designed to minimize direct and indirect air pollutants.
- 6.F.8. The County shall submit development proposals to the PCAPCD for review and comment in compliance with CEQA prior to consideration by the appropriate decision-making body.
- 6.F.9. In reviewing project applications, the County shall consider alternatives or amendments that reduce emissions of air pollutants.
- 6.F.10. The County may require new development projects to submit an air quality analysis for review and approval. Based on this analysis, the County shall require appropriate mitigation measures consistent with the PCAPCD's 1991 Air Quality Attainment Plan (or updated edition).
- 6.G.1. The County shall require new development to be planned to result in smooth flowing traffic conditions for major roadways. This includes traffic signals and traffic signal coordination, parallel roadways, and intra- and inter-neighborhood connections where significant reductions in overall emissions can be achieved.
- 6.G.3. The County shall encourage the use of alternative modes of transportation by incorporating public transit, bicycle, and pedestrian modes in County transportation planning and by requiring new development to provide adequate pedestrian and bikeway facilities.
- 6.G.5. The County shall endeavor to secure adequate funding for transit services so that transit is a viable transportation alternative. New development shall pay its fair share of the cost of transit equipment and facilities required to serve new projects.
- 6.G.6. The County shall require large new developments to dedicate land for and construct appropriate improvements for park-and-ride lots, if suitably located.

Foresthill Divide Community Plan Goals and Policies

The proposed FDCP includes the following goals and policies related to air quality:

Goal 4.C.1. Accurately determine and fairly mitigate the local and regional air quality impacts of projects proposed in the county.

Policies

4.C.1-1 The County shall determine project air quality impacts using analysis methods and significance thresholds recommended by the PCAPCD.

Note: The District is preparing guidelines that will provide standard criteria for determining significant environmental effects, that will provide a uniform method of calculating project emissions, and that will provide standard mitigation measures to reduce air quality impacts. The District now has interim thresholds of significance (10 tons ROG or NO_x per year) and recommends analysis methods on a project by project basis.

Projects analyzed in sufficient detail to determine air quality impacts in an EIR or negative declaration could be exempt from further analysis during subsequent discretionary approvals such as zone changes or subdivision maps. For projects where insufficient details were known at the time the EIR was prepared, the analysis should be focused on specific impacts not previously addressed.

4.C.1-2 The County shall ensure that air quality impacts identified during CEQA review are consistently and fairly mitigated.

4.C.1-3 The County shall ensure all air quality mitigation measures are feasible, implementable and cost effective.

4.C.1-4 The County shall reduce the air quality impacts of development projects that may be insignificant by themselves, but cumulatively are significant.

4.C.1-5 The County shall encourage innovative measures to reduce air quality impacts.

Goal 4.C.2. Educate the public on the impact of individual transportation, lifestyle, and land use decisions on air quality.

Policies

4.C.2-1 The County shall work to improve the public's understanding of the land use, transportation, and air quality link.

4.C.2-2 The County shall encourage local public and private groups that provide air quality education programs.

Goal 4.C.3. Ensure that new development provides the facilities and programs that improve the effectiveness of transportation control measures and congestion management programs.

Policies

4.C.3-1 The County shall work with employers and developers to provide employees and residents with attractive, affordable transportation alternatives.

4.C.3-2 The County shall work to establish public/private partnerships to develop satellite and neighborhood work centers for telecommuting.

Note: This policy is intended for communities with significant numbers of information based workers who are now commuting long distances for employment.

Goal 4.C.4. Provide adequate sites for industrial development while minimizing the health risks to people resulting from industrial toxic or hazardous air pollutant emissions.

Policies

- 4.C.4-1 The County shall require residential development projects and projects categorized as sensitive receptors to be located an adequate distance from existing and potential sources of toxic emissions such as freeways, major arterials, industrial sites and hazardous material locations.

Note: This policy is intended to protect existing residential development and other sensitive receptors from conflicts with new industrial development. The types of businesses that are categorized as point sources are often incompatible with residential uses for a number of reasons including noise, truck traffic, visual concerns, and air quality. These are not the types of businesses encouraged for mixed-use developments or for commercial/office activity centers where we would expect more people to walk to work. The policy recognizes that businesses that are point sources are vital to the economy of Placer County and will be built, but that cities and counties must use care in planning their sites to avoid conflicts.

- 4.C.4-2 The County shall require new air pollution point sources such as, but not limited to, industrial, manufacturing, and processing facilities to be located an adequate distance from residential areas and other sensitive receptors.

Goal 4.C.5. Reduce emissions of PM₁₀ and other particulates with local control potential.

Policies

- 4.C.5-1 The County shall work with the PCAPCD to reduce particulate emissions from construction, grading, excavation, and demolition to the maximum extent feasible.

- 4.C.5-2 The County shall reduce PM₁₀ emissions from County-maintained roads to the maximum extent feasible.

Goal 4.C.6. Develop local programs to minimize emissions from residential woodburning.

Policies

- 4.C.6-1 The County shall encourage developers to limit fireplace installations in new developments.

- 4.C.6-2 The County shall encourage developers to install low emitting, EPA certified fireplace inserts and/or wood stoves, pellet stoves or natural gas fireplaces.

- 4.C.6-3 The County shall encourage the Air Pollution Control District to establish a buy-back program for older, non-certified wood burning stoves.

Goal 4.C.7. Employ land use utilization strategies as a means of reducing mobile emissions.

Policies

- 4.C.7-1 The County shall encourage the Mixed-Use areas to provide commercial services such as day care centers, restaurants, banks, and stores near employment centers.

- 4.C.7-2 The County shall work closely with school districts to help them choose school site locations that allow students to safely walk or bicycle from their homes.
- 4.C.7-3 The County shall plan park and ride lots at suitable locations serving long distance and local commuters.
- 4.C.7-4 The County shall encourage infill of vacant parcels.
- 4.C.7-5 The County shall encourage project sites designed to increase the convenience, safety and comfort of people using transit, walking or cycling.
- 4.C.7-6 The County shall require an air quality/transportation design analysis for projects exceeding District CEQA significance thresholds (interim thresholds are 10 tons/year for ROG and NO_x).
- Note: The design analysis should be prepared by a civil engineer, architect, or urban designer familiar with design measures that can reduce trips. It could be part of the traffic study normally required for large development projects. This policy is intended to apply to large projects such as regional shopping centers and large subdivisions. Projects consistent with adopted County Design Guidelines or with a previously reviewed specific plan or community plan could be exempt.*
- 4.C.7-7 The County shall ensure that upgrades to existing roads (widening, curb and gutter, etc.) include bicycle and pedestrian improvements in their plans and implementation where appropriate.
- 4.C.7-8 The County shall discourage open outdoor burning in new residential development with densities greater than two dwelling units per acre.
- 4.C.7-9 The County shall require new large residential development proposals to reduce project air quality impacts below the significant level.

3.8.3 IMPACT EVALUATION CRITERIA

Appendix G of the State CEQA Guidelines state that a project would normally have a significant adverse air quality impact if project-generated pollutant emissions would:

- Cause a violation of an ambient air quality standard or worsen an existing violation
- Contribute substantially to an existing or projected air quality violation
- Expose sensitive receptors to substantial pollutant concentrations
- Conflict with adopted environmental plans, policies, or regulations for air pollutants
- Expose sensitive receptors to objectionable odors

In practice, the PCAPCD recommends use of a combination of quantitative and qualitative criteria described below. For the purposes of this EIR, impacts are considered significant if the FDCP would:

- Cause emissions from all project-related sources (including mobile sources) to exceed the PCAPCD's New Source Review Rule, which includes the following thresholds:

- ROG 82 lb/day
 - NO_x 82 lb/day
 - CO 550 lb/day
 - PM₁₀ 82 lb/day
- Cause or contribute to local CO concentrations exceeding 20 parts per million (ppm) over a 1-hour averaging period or 9 ppm over an 8-hour averaging period
 - Expose sensitive receptors to toxic air contaminants that would adversely impact their health and well being, or
 - Conflict with or obstruct implementation of any applicable air quality plans

3.8.4 IMPACTS AND MITIGATION MEASURES

Impact 3.8-1 New stationary and mobile sources of air pollutants caused by buildout of the proposed FDCP will result in increased emissions of ROG, NO_x, CO and PM₁₀.

Discussion/Conclusion: At the end of the FDCP horizon period (2030), operation of the new uses developed in accordance with the proposed Plan would cause increased emissions by generating new motor vehicle trips and by causing additional energy use and operation of other stationary sources of emissions. It is projected that workers, residents, tourists and visitors will generate approximately 12,045 average daily trips by the 2030 horizon year.. New residential, commercial and industrial land uses associated with the proposed Plan would also result in new emissions from the use of electricity, propane and wood for heating, cooling, ventilation and lighting. These are stationary- and area-source emissions that would be produced either directly in the Plan area, or indirectly through increased use of utilities located elsewhere. Motor vehicle use, energy use, and other stationary sources would cause emissions of ROG, NO_x, CO and PM₁₀ that would contribute to existing violations of the state-level and/or federal ambient air quality standards. Total mobile source emissions associated with the FDCP 2030 horizon year, excluding the Forest Ranch Concept Plan, are presented in Table 3.8-4.

Table 3.8-4 Estimated Incremental Mobile Source Emissions Without Forest Ranch

Use	Emissions in lbs/day			
	Reactive Organic Gasses (ROG)	Nitrogen Oxides(NO _x)	Particulate Matter (PM ₁₀)	CO
Single Family Housing	61.63	48.05	55.57	542.11
Multiple Family Housing	.70	.48	.58	5.67
Retail	30.57	24.64	15.26	157.15
Business/Professional	5.82	1.20	1.46	14.03
Industrial	3.57	3.38	4.20	39.71
High School	10.96	4.55	5.39	52.62
Total Emissions	113.25	82.30	82.46	811.29

Source: Quad Knopf 2007

The proposed FDCP includes the following goals and policies that address this impact:

Goals 4.C.1, 4.C.2, 4.C.3, 4.C.5 and 4.C.7 and Policies 4.C.1-1, 4.C.1-2, 4.C.1-3, 4.C.1-4, 4.C.1-5, 4.C.2-1, 4.C.2-2, 4.C.3-1, 4.C.3-2, 4.C.5-2, 4.C.7-1, 4.C.7-2, 4.C.7-3, 4.C.7-4, 4.C.7-5, 4.C.7-6, 4.C.7-7, 4.C.7-8 and 4.C.7-9

Although these goals and policies will assist in reducing emissions, development within the Plan area will contribute to regional emissions of these pollutants. Because the Plan area is currently within a non-attainment area for PM₁₀ and ozone, and mobile emissions alone will exceed PCAPCD thresholds, impacts must be considered *significant, unavoidable and cumulative*. Implementation of the FDCP goals and policies and compliance with PCAPCD New Source Review Rules will reduce these impacts, but *not to a less than significant* level.

Mitigation Measure

No additional mitigation measures are feasible.

Discussion/Conclusion with Incorporation of the Forest Ranch Concept Plan: Forest Ranch Concept Plan operations will introduce stationary, area, and mobile sources of criteria air pollutant emissions to the study area. The primary area and stationary sources will include residential gas heaters and stoves, residential landscaping equipment, and commercial landscape maintenance equipment. Other area source emissions will include those from residential barbecues and consumer product use. Mobile sources will include exhaust emissions from motor vehicles (including recreational vehicles) and re-entrained dust emissions from motor vehicle travel on paved roads. Estimated incremental mobile source emissions shown in Table 3.8-5 incorporate the total pounds per day estimates within the entire FDCP area, inclusive of the Forest Ranch Concept Plan, in the project horizon year 2030. As is the case for the FDCP without incorporation of the Forest Ranch Concept Plan, implementation of the FDCP goals and policies and compliance with PCAPCD New Source Review Rules will reduce these impacts, but *not to a less than significant* level.

Table 3.8-5 Estimated Incremental Mobile Source Emissions With Forest Ranch

Use	Emissions in lbs/day			
	Reactive Organic Gasses (ROG)	Nitrogen Oxides (NO _x)	Particulate Matter (PM ₁₀)	CO
Single Family Housing	67.79	51.76	61.13	596.32
Multiple Family Housing	.70	.48	.58	5.67
Age Restricted Housing	36.36	33.16	39.16	382.06
Retail	49.52	17.26	19.32	198.92
Business/Professional	11.93	7.48	9.14	87.67
Medical Office	37.69	8.28	9.70	94.59
Industrial	3.57	3.38	4.20	39.71
Golf Course	7.45	4.22	4.99	48.66
Recreational Vehicle Park	3.73	2.19	2.58	25.20
Equestrian Center	.36	.23	.27	2.65
High School	10.96	4.55	5.39	52.62
Total Emissions	230.06	133.51	156.46	1,534.07

Source: Quad Knopf 2007

Mitigation Measures

- 3.8-1 *Compliance with Forest Ranch Specific Plan Area Development Standards 2.F.1-1 through 2.F.1-4 will reduce air quality impacts, but not to a less than significant level.*
- 3.8-2 *Construction activities associated with development under the proposed FDCP will cause emissions of dust and contaminants from construction equipment exhaust that may contribute substantially to existing air quality violations or expose sensitive receptors to substantial pollutant concentrations.*

Discussion/Conclusion: Construction activity often produces high levels of fugitive dust, including PM₁₀ particulate matter. Construction-related fugitive dust is generated primarily by grading activities and heavy equipment travel over temporary roads on-site. Fugitive dust emissions at a given construction site would vary daily, depending on the level and type of activity, silt content in the soil, and the weather. Such matter is highly susceptible to airborne movement by wind, and may affect air quality levels in adjacent sites (particularly PM₁₀ concentrations).

The proposed FDCP includes the following goal and policy that address this impact:

Goal 4.C.5 and Policy 4.C.5-1

Construction of new development allowed by the proposed FDCP will occur over a period of many years, and it is not possible to know when PCAPCD thresholds may be exceeded. Many construction projects will be small (such as individual houses) and will not exceed thresholds. However, it is possible that larger projects may be constructed (such as in the Mixed-Use areas and subdivisions) that will exceed thresholds. Because the Plan area is currently within a non-attainment area for PM₁₀ and ozone, and emissions may exceed PCAPCD thresholds, impacts must be considered *potentially significant, unavoidable and cumulative*. Implementation of the FDCP goals and policies and compliance with the PCAPCD Menu of Mitigation Measures in affect at the time of individual project construction will reduce this impact, but may *not always reduce the impact to a level that is less than significant*.

Mitigation Measure

No additional mitigation measures are available at the Community Plan level. New development which would exceed PCAPCD thresholds will require CEQA review, which could include mitigation measures specifically designed to address impacts associated with that project.

Impact 3.8-3 Implementation of the proposed FDCP could result in placement of sensitive land uses near potential sources of objectionable odors, dust, or toxic air contaminants.

Discussion/Conclusion: Odors, dust, or toxic air contaminants can be emitted by stationary or area sources throughout the Plan area, although few potential sources exist. The occurrence and severity of potential odor impacts depend upon numerous factors. The nature, frequency, and intensity of

the source, the wind speeds and direction, and the sensitivity of the receiving location each contribute to the intensity of the impact.

While offensive odors rarely cause any physical harm, they can be unpleasant and cause distress among the public and generate citizen complaints. Managing sources of odors is accomplished by regulatory requirements and appropriate land use planning. Odors are often associated with facilities such as wastewater treatment plants and certain types of industrial operations. No wastewater treatment plants are currently located within the Plan area. Any such plant proposed to be constructed in the future to serve a new development would require separate CEQA review. The types of industrial uses allowed by the FDCP are limited, and are not likely to produce offensive odors.

Diesel particulate emissions, a known toxic air contaminant (TAC), can be expected to occur within the Plan area during operation of motor vehicles and construction equipment. To address these emissions, statewide programs and regulations are presently being developed by the CARB that will lead to reduced risks from diesel exhaust. In light of the available information, the effects of the toxic emissions from existing and future vehicle operations in the Plan area are not expected to be substantial.

The proposed FDCP includes the following goal and policies that address this impact:

Goal 4.C.4 and Policies 4.C.4-1 and 4.C.4-2

In addition, Regulation 9 of the PCAPCD Rules and Regulations regulates toxic air contaminants. Implementation of the FDCP goals and policies and compliance with the PCAPCD Rules and Regulations will reduce impacts to a level that is *less than significant*.

Mitigation Measure

No mitigation measures are required.

Discussion/Conclusion with Incorporation of the Forest Ranch Concept Plan: Although not a health hazard, odors from the collection, treatment, storage and land disposal of treated and untreated wastewater can adversely affect occupants of nearby residences, both on- and off-site. Odors from the proposed equestrian center can similarly affect residents. Impacts related to odors are *potentially significant*.

Mitigation Measures

Implementation of the following measures may not totally eliminate odors, but will reduce them to a *less than significant* level:

- 3.8-3a *The specific design and location of all wastewater collection and treatment facilities, effluent storage ponds and land disposal areas shall be reviewed and approved by the Central Valley Regional Water Quality Control Board prior to construction. Wastewater collection and treatment facilities shall be constructed with odor*

containment, ventilation and scrubbing systems so that odors cannot be detected beyond the plant boundary. Emergency storage ponds shall be equipped with aerators and washdown facilities to control odor emissions. The Environmental Health Division may require certain wastewater collection and treatment equipment and facilities to be covered, if determined necessary to assure optimum odor control.

3.8-3b *The wastewater treatment facility and the equestrian center shall be subject to PCAPCD Nuisance Rule (Rule 205):*

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which have a natural tendency to cause injury or damage to business or property.

Impact 3.8-4 Emission of pollutants from wood-burning appliances associated with residential uses.

Discussion/Conclusion: The use of fireplaces and wood-burning stoves will contribute ozone precursor gases and particulates to the air. The EPA has established particulate emission limits for new wood stoves to reduce emissions to a maximum of 4.1 grams per hour for stoves with catalytic converters, and 7.5 grams per hour for stoves without catalytic devices. Since 1992, EPA has required all stoves sold in the U.S. to be certified. In addition, wood burning would primarily occur during the cold winter months, when ozone is less likely to form. However, temperature inversions typically occur in winter months that can cause wood smoke particulates to remain at ground level rather than dissipating.

The proposed FDCP includes the following goal and policies that address this impact:

Goal 4.C.6 and Policies 4.C.6-1, 4.C.6-2 and 4.C.6-3

As air quality rules and regulations become increasingly stringent, it is likely that the CARB and/or the PCAPCD will severely limit or ban wood-burning fireplaces during the planning period, and place increasing restrictions on the types of wood-burning stoves that can be installed in new developments. Certain restrictions already exist in the Squaw Valley area of Placer County. Compliance with the goal and policies of the FDCP and CARB and PCAPCD rules and regulations will reduce impacts to a level that is *less than significant*.

Mitigation Measure

No mitigation measures are required.

Impact 3.8-5 Construction activities within the Forest Ranch Concept Plan area could result in release of naturally-occurring asbestos.

A concern associated with construction activities in the Sierra foothills is the potential presence of natural-occurring serpentine rock and soils, which contain asbestos. Asbestos is classified as a known human carcinogen by state and federal health agencies. Asbestos fibers are freed from the rock or soil when it is crushed or broken and through natural weathering processes. The California Department of Conservation, Division of Mines and Geology, has prepared a statewide map of areas likely to contain naturally-occurring asbestos. The Forest Ranch Concept Plan area is indicated as being likely to contain naturally-occurring asbestos.¹

Soils studies of the Concept Plan area have not been conducted, nor has it been determined what areas would be disturbed. Impacts related to naturally-occurring asbestos during construction are ***potentially significant***.

Mitigation Measure

Implementation of the following measure will reduce the impact of the release of naturally-occurring asbestos to a level that is ***less than significant***:

3.8-5 *Compliance with Forest Ranch Specific Plan Area Development Standard 2.F.1-4*

¹ California Department of Conservation, Division of Mines and Geology, A General Location Guide for Ultramafic Rocks in California- Areas More Likely to Contain Naturally-Occurring Asbestos, August 2000.

3.9 TRANSPORTATION & CIRCULATION

3.9.1 INTRODUCTION

The Transportation and Circulation Element is based on the *Draft Traffic Study for the Foresthill Divide Community Plan, May 2007* prepared by MRO Engineers. The full text of this study is contained in [Appendix C](#). The Transportation and Circulation section of this EIR presents and discusses transportation and circulation impacts associated with development in accordance with the Foresthill Divide Community Plan (FDCP).

3.9.2 SETTING

PURPOSE

The Transportation and Circulation Element of the Foresthill Divide Community Plan is intended to serve the following purposes:

- Establish goals and policies to guide the development and operation of the transportation system
- Describe existing transportation conditions and circulation features within the Plan area
- Describe future transportation conditions resulting from development of the Plan area in accordance with proposed land uses
- Identify improvements to, and development of, the transportation system to ensure the provision of a safe, efficient and multi-modal transportation system consistent with the established goals and policies, and
- Identify a method for financing the identified transportation needs in the Plan area.

The Circulation Element is one of the seven mandatory General Plan elements. All of the topics required to be addressed in a Circulation Element by State law are covered in the Placer County General Plan. The purpose of the Transportation and Circulation Element of the Foresthill Divide Community Plan is to address topics specific to the Plan area, which are of particular interest to residents of the Foresthill Divide.

The future circulation system is also presented in map form, as Figure 3.9-3 of this EIR.

DISCUSSION

Existing Transportation System

The Foresthill Community Plan area is served by a system of County Roads. The existing roadways in the Plan area are primarily two-lane rural facilities. Existing traffic volumes are low

to very low, and, with one am peak hour exception, all roads currently operate at LOS “D” or better. All of the major roadways intersect with Foresthill Road, which serves as the backbone of the roadway system in the Plan area. The need to maintain an acceptable LOS “D” on Foresthill Road is a potential constraint to future development in the Plan area. The dependence on this roadway also raises concerns regarding emergency response and the potential need to evacuate the Plan area.

Because of the rural low density nature, topography and size of the plan area, bicycle and pedestrian facilities and transit service are limited. However, many trails are located in the Plan area. This trail system offers the potential for future extensions and linkages to better serve Plan area residents as well as tourists and recreational visitors.

The existing roadway system is illustrated in Figure 3.9-1 and current AM and PM peak hour traffic volumes for key roadway segments in the plan area are presented in Table 3.9-1

Existing traffic operations on key roadway segments in the Foresthill Divide Community Plan area as well as at the study intersections at the Interstate 80/Auburn Ravine Road/Foresthill Road interchange are summarized as follows:

Key Roadways

Foresthill Road is a two-lane, east-west roadway that provides the primary connection between Auburn and the Foresthill community. From the Foresthill Bridge to Owl Hill Court, Foresthill Road is classified as a two-lane “Class I” highway. East of Owl Hill Court, the character of the road changes, and Foresthill Road is classified as a local access road. To the east of the Foresthill community, Foresthill Road continues to Soda Springs and carries very low traffic volumes.

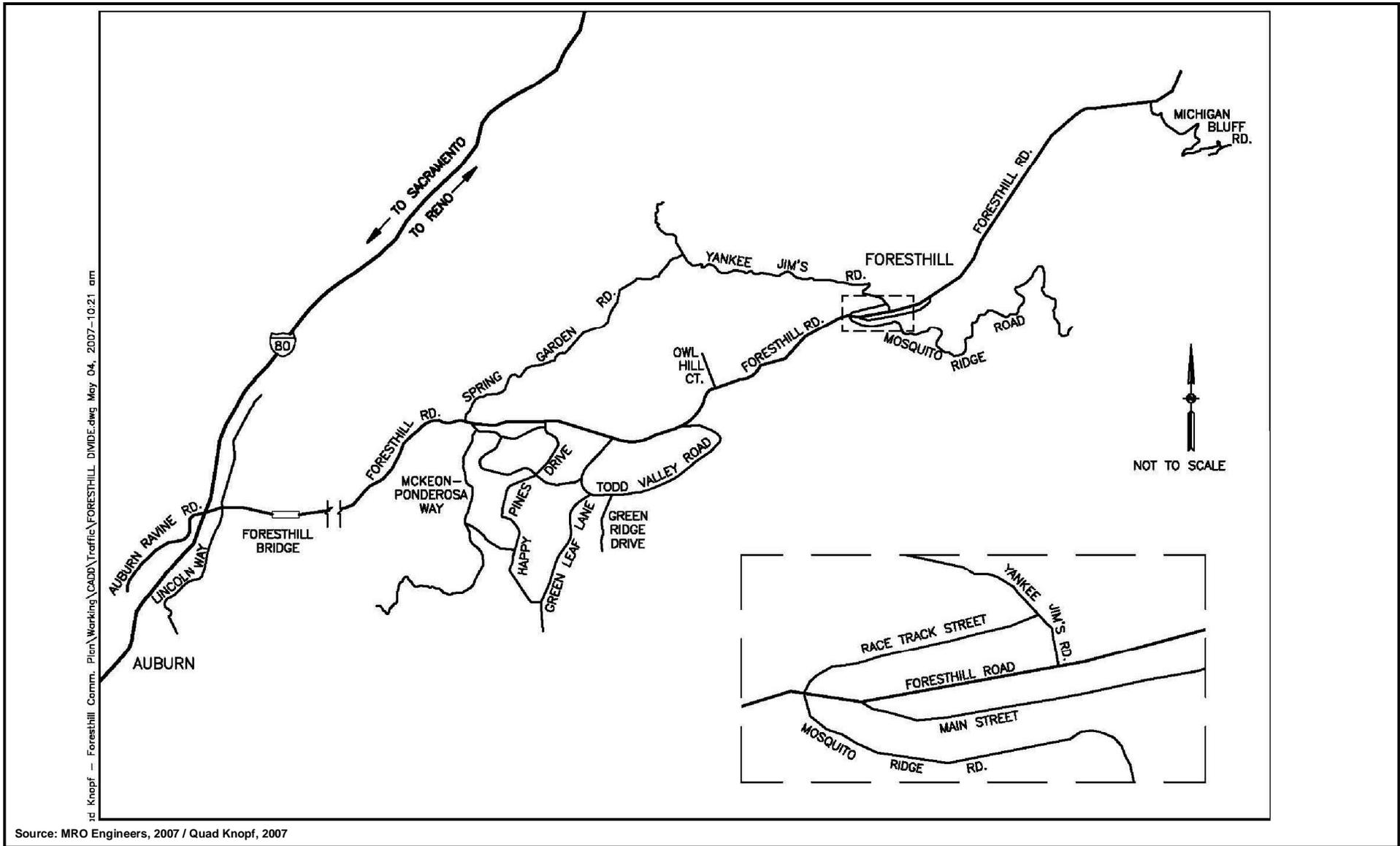
Spring Garden Road is a two-lane “secondary/feeder” roadway in the Foresthill Divide Community Plan area. This road generally runs in a northeast/southwest direction between Foresthill Road and Yankee Jim’s Road.

Yankee Jim’s Road is a narrow, two-lane roadway that runs northwest from the “core” downtown area of Foresthill. This secondary/feeder roadway provides a connection between Spring Garden Road and Foresthill Road.

McKeon-Ponderosa Way is a two-lane, north-south roadway that provides a connection to Foresthill Road from the residential area at the west end of Todd Valley.

Happy Pines Drive is a two-lane roadway serving mostly residential land uses. Happy Pines Drive also provides a connection to Foresthill Road from the Todd Valley residential area.

Todd Valley Road is also a two-lane roadway serving Todd Valley. It begins at Foresthill Road east of Happy Pines Drive and continues in a loop to the east until connecting back with Foresthill Road. The western half of the Todd Valley Road loop carries much higher traffic volumes than the eastern half of the loop.



Mosquito Ridge Road is a two-lane, north-south roadway that originates at Foresthill Road on the western edge of the “core” downtown area of Foresthill. Just south of the Foresthill community, Mosquito Ridge Road becomes quite mountainous and continues winding into the Tahoe National Forest.

Race Track Street is a two-lane local access roadway in the “core” of the Foresthill Community. It is primarily lined by residential land uses and runs northeast from Foresthill Road to its terminus at Yankee Jim’s Road.

Main Street is a two-lane local access roadway that runs parallel to Foresthill Road in the downtown area. It provides access to many of the community’s retail land uses in the core area.

Michigan Bluff Road is a two-lane roadway that provides a north/south connection between the community of Michigan Bluff and Foresthill Road to the north.

The key roadways that are outside of the Community Plan area, but are in the vicinity of the study intersections at the Interstate 80/Auburn Ravine Road/Foresthill Road interchange, are described below.

Auburn Ravine Road is a two-lane roadway that provides access to Interstate 80 and the commercial area surrounding the freeway interchange. Within the study area, Auburn Ravine Road is an east-west facility, but west of Bowman Road it curves to the south. East of Lincoln Way, Auburn Ravine Road becomes Foresthill Road.

Bowman Road is a north-south frontage road along the west side of I-80. It provides access to a number of commercial uses between Auburn Ravine Road and Bell Road to the north.

Lincoln Way serves as a north-south frontage road in the study area, running along the east side of I-80. It also provides direct access to downtown Auburn, a short distance to the south.

Table 3.9-1 Roadway Segment Level of Service Summary¹ - Existing Conditions

Roadway Segment	Direction	AM Peak Hour		PM Peak Hour	
		Peak Hour Volume	LOS ²	Peak Hour Volume	LOS
Foresthill Road – Foresthill Bridge to Spring Garden Road	Eastbound	119	B	525	C
	Westbound	523	C	147	C
Foresthill Road – Spring Garden Rd. to Todd Valley Rd. (West)	Eastbound	156	A	274	B
	Westbound	319	D	187	B
Foresthill Road – Todd Valley Road (West) to Owl Hill Court	Eastbound	208	B	229	A
	Westbound	269	D	197	C
Foresthill Road – Owl Hill Court to Yankee Jim’s Road	Eastbound	142	B	142	B
	Westbound	148		85	
Foresthill Road – Yankee Jim’s Road to Michigan Bluff Road	Eastbound	10	A	32	A
	Westbound	30		16	
Foresthill Road – East of Michigan Bluff Rd.	Eastbound	9	A	12	A
	Westbound	12		4	

Roadway Segment	Direction	AM Peak Hour		PM Peak Hour	
		Peak Hour Volume	LOS ²	Peak Hour Volume	LOS
McKeon-Ponderosa Way	Northbound	113	B	22	B
	Southbound	16		126	
Spring Garden Road	Northbound	6	A	43	B
	Southbound	37		21	
Happy Pines Drive	Northbound	101	B	38	B
	Southbound	39		96	
Todd Valley Road (West)	Northbound	207	C	104	C
	Southbound	46		165	
Todd Valley Road (East)	Northbound	11	A	19	A
	Southbound	15		6	
Mosquito Ridge Road	Northbound	5	A	5	A
	Southbound	8		7	
Yankee Jim's Road	Northbound	4	A	15	A
	Southbound	11		7	
Main Street	Eastbound	25	A	38	A
	Westbound	10		28	
Michigan Bluff Road	Northbound	10	A	9	A
	Southbound	5		15	
Race Track Street	Eastbound	28	A	51	A
	Westbound	24		25	

Notes:
¹ Reference: Transportation Research Board, *Highway Capacity Manual*, 2000.
² Level of service.

Roadway Segment Analysis Methodology

The nineteen existing roadway segments analyzed in the Foresthill Divide Community Plan area were divided into three categories of roadway types: Class I highways, Secondary/Feeder roads, and Local Access Roads. The level of service calculation methodology for each of these three roadway types is described in detail below.

Class I Highways

The westernmost segments of Foresthill Road are defined as “Class I” highways, according to information provided in the Highway Capacity Manual (Transportation Research Board, 2000) (*HCM*). The six directional segments of Foresthill Road between the Foresthill Bridge and Owl Hill Court fall into this category, as they act as relatively high-speed routes in and out of the Community (i.e., they primarily serve through traffic rather than providing local access). These roadway segments were analyzed using the “two-lane highway methodology documented in the *HCM*, with input parameters based on field observations (e.g., peak traffic volume, peak hour factor, heavy vehicle percentage, passing lanes percentage, “no passing” percentage, etc.). The *HCM* method determines directional roadway segment level of service (LOS) based on a combination of “average travel speed” and “percent time-spent-following,” as shown in Table 3.9-2. For this analysis, the level of service calculations were performed using the *HCS+*

software package, which implements the two-lane highway analysis procedures documented in the *HCM*.

Table 3.9-2 Level of Service Definitions¹ - Class I Two-Lane Highway

Level of Service	Description	Percent Time-Spent-Following	Average Travel Speed (MPH ²)
A	Free-flow operations; motorists can travel at desired speed and passing demand is well below capacity.	< 35	> 55
B	Stable flow, with speeds generally higher than 50 miles per hour. The passing demand to maintain desired speeds becomes significant.	> 35 – 50	> 50 – 55
C	Stable flow at slower speeds. Individuals become noticeably affected by interactions with others, and percent time-spent-following drastically increases.	> 50 – 65	> 45 – 50
D	Unstable flow, with slower speeds and long platoons. Turning vehicles and roadside distractions cause major shock waves in the traffic stream.	> 65 – 80	> 40 – 45
E	Operating conditions at or near capacity. Speeds are slow, and passing is virtually impossible. Platooning becomes intense.	> 80	< 40
F	Heavily congested flow.	N/A ³	
Notes:			
¹ Reference: Transportation Research Board, <i>Highway Capacity Manual</i> , 2000.			
² Miles per hour.			
³ LOS F applies whenever the flow rate exceeds the roadway segment capacity.			

Secondary/Feeder Roads and Local Access Roads

The remaining roadway segments were evaluated through a comparison of the total (bi-directional) hourly traffic volume to a defined set of level of service thresholds. The level of service thresholds for “Secondary/Feeder Roads” and “Local Access Roads” are presented in Tables 3.9-3 and 3.9-4, respectively. The thresholds utilized in this analysis were developed by MRO Engineers, Inc., and were described to Placer County staff in a memorandum dated August 5, 2005(see memorandum located within the Traffic Study located in Appendix C).

As described in the August 5, 2005 memorandum, the following roadway segments were categorized as Secondary/Feeder Roads: McKeon-Ponderosa Way, Spring Garden Road, Happy Pines Drive, Todd Valley Road, Mosquito Ridge Road, Yankee Jim’s Road, and Michigan Bluff Road. Table 3.9-3 defines the level of service thresholds for the Secondary/Feeder roadways.

Table 3.9-3 Level of Service Thresholds – Secondary/Feeder Roads

Level of Service	Maximum Hourly Traffic Volume (Both Directions Combined)
A	60
B	200
C	375

Level of Service	Maximum Hourly Traffic Volume (Both Directions Combined)
D	575
E	1,425
F	> 1,425
Reference: MRO Engineers, Inc., Memorandum to Placer County Department of Public Works, August 5, 2005. (See Appendix A)	

The Local Access Roads category includes the following roadway segments: Main Street, Race Track Street, and the three remaining segments of Foresthill Road from Owl Hill Court to east of Michigan Bluff Road. Level of service thresholds for these roadways are presented in Table 3.9-4. The thresholds for a “two-lane with two-way left-turn lane” roadway only apply to portions of the segment of Foresthill Road between Owl Hill Court and Yankee Jim’s Road, which has a two-way left-turn lane over a substantial portion of its length. All other study roadway segments listed here were analyzed using the “two-lane” road thresholds.

Table 3.9-4 Level of Service Thresholds – Local Access Roads

Level of Service	Maximum Hourly Traffic Volume (Both Directions Combined)	
	Two-Lane	Two-Lane With Two-Way Left-Turn Lane
A	100	125
B	375	450
C	725	875
D	1,275	1,525
E	2,275	2,725
F	> 2,275	> 2,725
Reference: MRO Engineers, Inc., Memorandum to Placer County Department of Public Works, August 5, 2005. (See Appendix A)		

Intersection Analysis Methodology

Intersection operations are typically described in terms of level of service (LOS), which is reported on a scale from LOS A (representing free-flow conditions) to LOS F (which represents substantial congestion and delay). The level of service designations are based on a quantitative calculation of delay at the intersection. The specific approach to estimating delay is based on procedures documented in the *HCM*. Descriptions of operating conditions and delay values for signalized intersections are presented below.

The study intersections, all of which are signalized, were evaluated using the “operational analysis” methodology presented in the *HCM*. This methodology determines signalized intersection level of service by comparing the “average control delay per vehicle” to the thresholds shown in Table 3.9-5. Control delay represents the delay directly associated with the traffic signal. The intersection level of service calculations were performed using the *Synchro 6* software package, which implements the intersection analysis procedures documented in the *HCM* and also considers the relatively short intersection spacing that exists at the interchange.

To ensure a conservative analysis of conditions at the two freeway off-ramp intersections, it was assumed that right-turns-on-red from those off-ramps onto Auburn Ravine Road are very difficult during the peak hours. Field observations revealed that, because of the short intersection spacing along this section of Auburn Ravine Road, standing queues from the adjacent intersections often effectively block the ability of such right turns to be made. At the I-80 westbound off-ramp, the queues extend eastward from Bowman Road, while, at the I-80 eastbound ramp, queues generated at the Auburn Ravine/Foresthill Road/Lincoln Way intersection regularly extend back to, and even through, the off-ramp intersection. As such, it was assumed that a very limited number of right-turns-on-red from the off-ramps can occur during the peak hours.

Table 3.9-5 Level of Service Definitions – Signalized Intersections

Level of Service	Description	Average Control Delay (Seconds/Vehicle)
A	Very low delay. Most vehicles do not stop	≤ 10.0
B	Slight delay. Generally good signal progression.	10.1 – 20.0
C	Increased number of stopped vehicles. Fair signal progression.	20.1 – 35.0
D	Noticeable congestion. Large proportion of vehicles stopped.	35.1 – 55.0
E	Operating conditions at or near capacity. Frequent cycle failure.	55.1 – 80.0
F	Oversaturation. Forced or breakdown flow. Extensive queuing.	> 80.0

Reference: *Highway Capacity Manual* (Transportation Research Board, 2000).

Existing Conditions Traffic Volumes

Daily vehicle classification counts were conducted on the nineteen roadway segments on Tuesday, May 17, 2005. The 24-hour volumes were used to determine the AM and PM peak hour directional traffic volume for each of the roadway segments, and the classification counts were used to calculate each road segment’s existing heavy vehicle percentage (i.e., percentage of trucks, buses, or recreational vehicles). The existing directional AM and PM peak hour traffic volumes for the roadway segments are presented in Table 3.9-1.

At the study intersections, AM and PM peak-period turning movement counts were conducted at the I-80 interchange on August 20, 2004. The traffic counts were performed on a summer Friday, in order to capture typical weekend recreational traffic at the I-80/Auburn Ravine Road/Foresthill Road interchange. As such, the counts represent higher-than-average traffic volumes, thereby providing a conservative indication of traffic operations at the study intersections. The peak hour traffic volumes and existing intersection lane configurations are shown on Figure 3.9-2.

Roadway Segment Level of Service

As shown in Table 3.9-1, all of the roadway segments operate at LOS "D" or better and meet the proposed LOS standard.

Intersection Level of Service

Table 3.9-6 presents the existing intersection levels of service. All four study intersections operate at LOS C or better in the AM peak hour. The intersections of Auburn Ravine Road/Bowman Road/I-80 Westbound On-ramp and Auburn Ravine Road/I-80 Eastbound Ramps operate at LOS B. The intersection of Auburn Ravine Road/I-80 Westbound Off-ramp operates at LOS A, and Auburn Ravine Road/Foresthill Road/Lincoln Way operates at LOS C. Thus, according to the Caltrans level of service requirement for the study intersections, all four intersections operate at acceptable levels of service in the AM peak hour (i.e., LOS D or better). During the PM peak hour, all four intersections again meet the Caltrans level of service requirement. The Auburn Ravine Road/I-80 Eastbound Ramps intersection and the Auburn Ravine Road/Foresthill Road/Lincoln Way intersection operate at LOS C. The Auburn Ravine Road/Bowman Road/I-80 Westbound On-ramp intersection operates at LOS B, whereas the Auburn Ravine Road/I-80 Westbound Off-ramp intersection operates at LOS A.

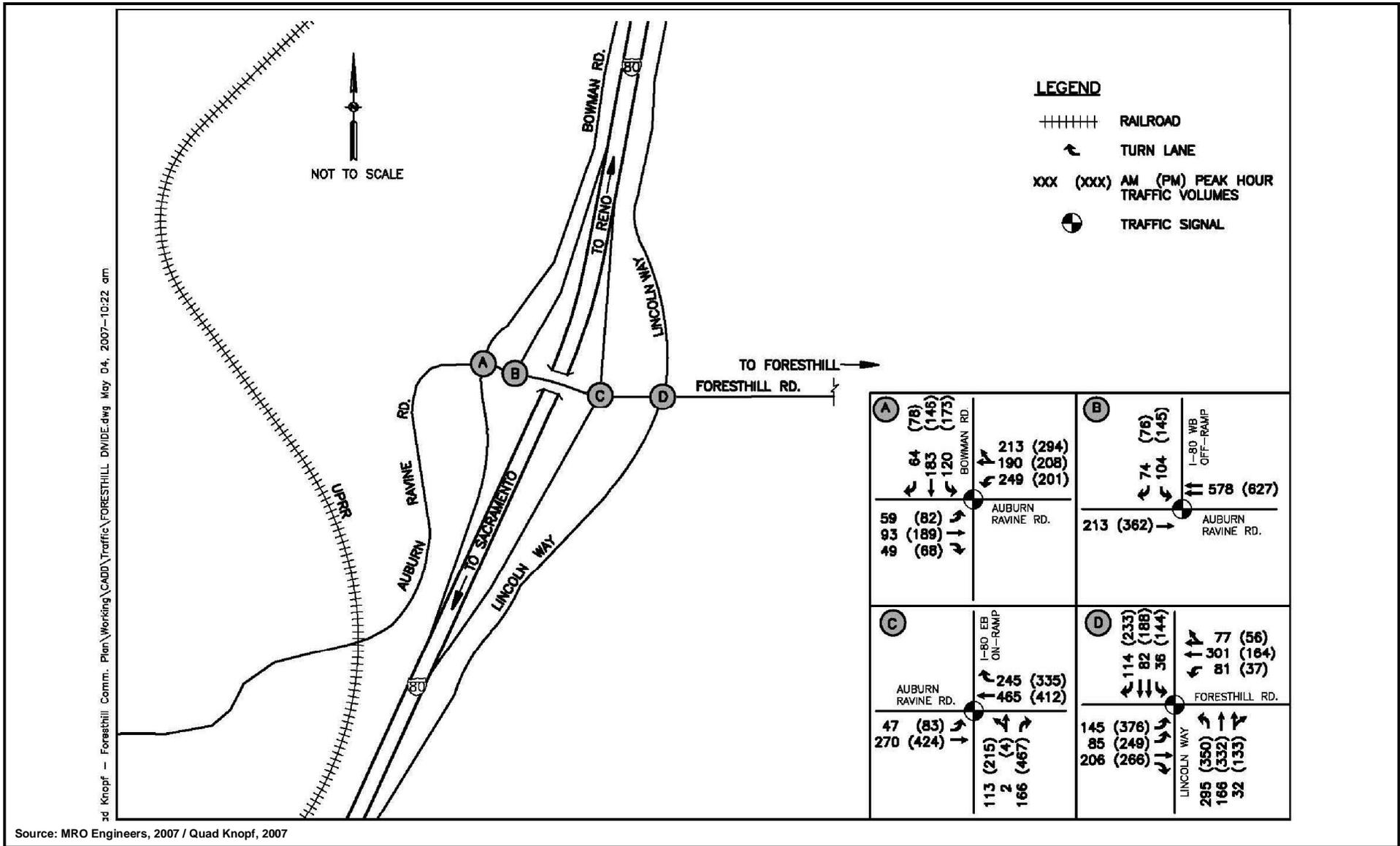
Table 3.9-6 Intersection Level of Service Summary¹ – Existing Conditions

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Delay ²	LOS ³	Delay	LOS
Auburn Ravine Road/Bowman Road/I-80 Westbound On-ramp	Signal	15.3	B	19.1	B
Auburn Ravine Road/I-80 Westbound Off-ramp	Signal	6.8	A	9.7	A
Auburn Ravine Road/I-80 Eastbound Ramps	Signal	13.2	B	20.7	C
Auburn Ravine Road/Foresthill Road/Lincoln Way	Signal	26.7	C	31.3	C
Notes:					
¹ Reference: Transportation Research Board, <i>Highway Capacity Manual</i> , 2000.					
² Seconds/vehicle.					
³ Level of service.					

Scenic Corridors

Because of the special scenic qualities of certain areas in the Plan area, those roads traversing these areas are recommended to be protected by special measures to enhance scenic views sheds.

- Foresthill Road within the Plan area and to Robinson Flat.
- Mosquito Ridge Road to Robinson Flat Road.
- Robinson Flat Road from Mosquito Ridge Road to Foresthill Road.



Alternative Transportation Systems

Motorized

PRIDE Industries provides public transportation service in the Plan area. PRIDE operates one bus daily between Foresthill and Auburn. The bus makes five scheduled stops within the community of Foresthill. The first pickup is at Forest House at 7:45 a.m., with the last pickup at the Todd's Valley Mobile Home Park at 8:05 a.m. before the bus travels to Auburn. In Auburn, the bus drops off all riders at the Auburn Station. In the afternoon, the route is reversed, and the bus leaves Auburn at 3:30 p.m. and travels back to Foresthill. The cost of a bus ride is \$2.50. No additional service to Foresthill is planned in the 2005 Placer County Short Range Transit Plan.

The Plan area is not served by freight or passenger rail service. The Plan area is not served by a public/commercial airport. The closest airports to Foresthill are the Georgetown Airport and Auburn Municipal Airport.

Non-Motorized

Non-motorized, alternative transportation includes pedestrian, equestrian, and bicycle activity. Both bikeway and pedestrian facilities used for transportation purposes within the Plan area are limited (however, trails used for recreational purposes are abundant). Limited sidewalks exist in the downtown Foresthill area, and bicyclists must share the roadways with motorists. This type of transportation is the most inexpensive to provide for and has the least impact on the environment. Non-motorized transportation can foster a built environment that is more accessible, livable, and interesting because it is scaled to the pedestrian and not the automobile.

Because of the rural nature and sparse population within the Plan area, the Foresthill Divide is reliant upon automobile usage. However, there is a community trail system that encourages pedestrian, equestrian, and bicycle use within the community for purposes of travel and recreation. Many of the Forest Service trails, BLM trails, community trails, and State Recreation Area trails accommodate equestrians and mountain bikers; the Foresthill Divide Loop trail serves as an alternative mode of non-motorized transportation along both sides of Foresthill Road, although it is not continuous.

Despite the inevitable dependence on automobiles, non-motorized transportation should be nurtured within the Plan area. The proposed equestrian staging area would provide support facilities for equestrians utilizing the community trails system. This type of facility would encourage non-motorized transportation and contribute to the rural character of the Plan area. Bicycling should be encouraged as well, especially within the town site and developed areas. Bicycling, horseback riding, and walking are efficient, inexpensive, and fun means of transportation that are consistent with the character and direction of the community.

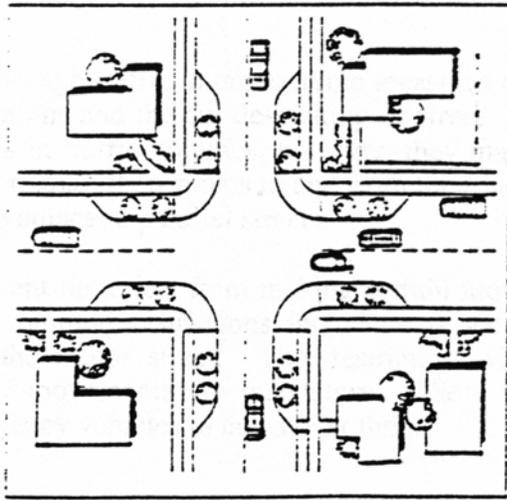
Planned Roadway Improvements

The following improvement is planned at the I-80/Auburn Ravine Road/Foresthill Road interchange:

- Widening of the I-80/Auburn Ravine Road overcrossing to four lanes – This improvement is included in the *Auburn/Bowman Community Plan* Capital Improvement Program, which is partially funded through the collection of traffic mitigation fees.

Based on County staff direction, it was assumed that the improvement listed above would be completed prior to all four future year analysis scenarios. Figure 3.9-3 illustrates the future roadway improvements and circulation network within the Foresthill Divide Community Plan area.

Traffic Calming Measures

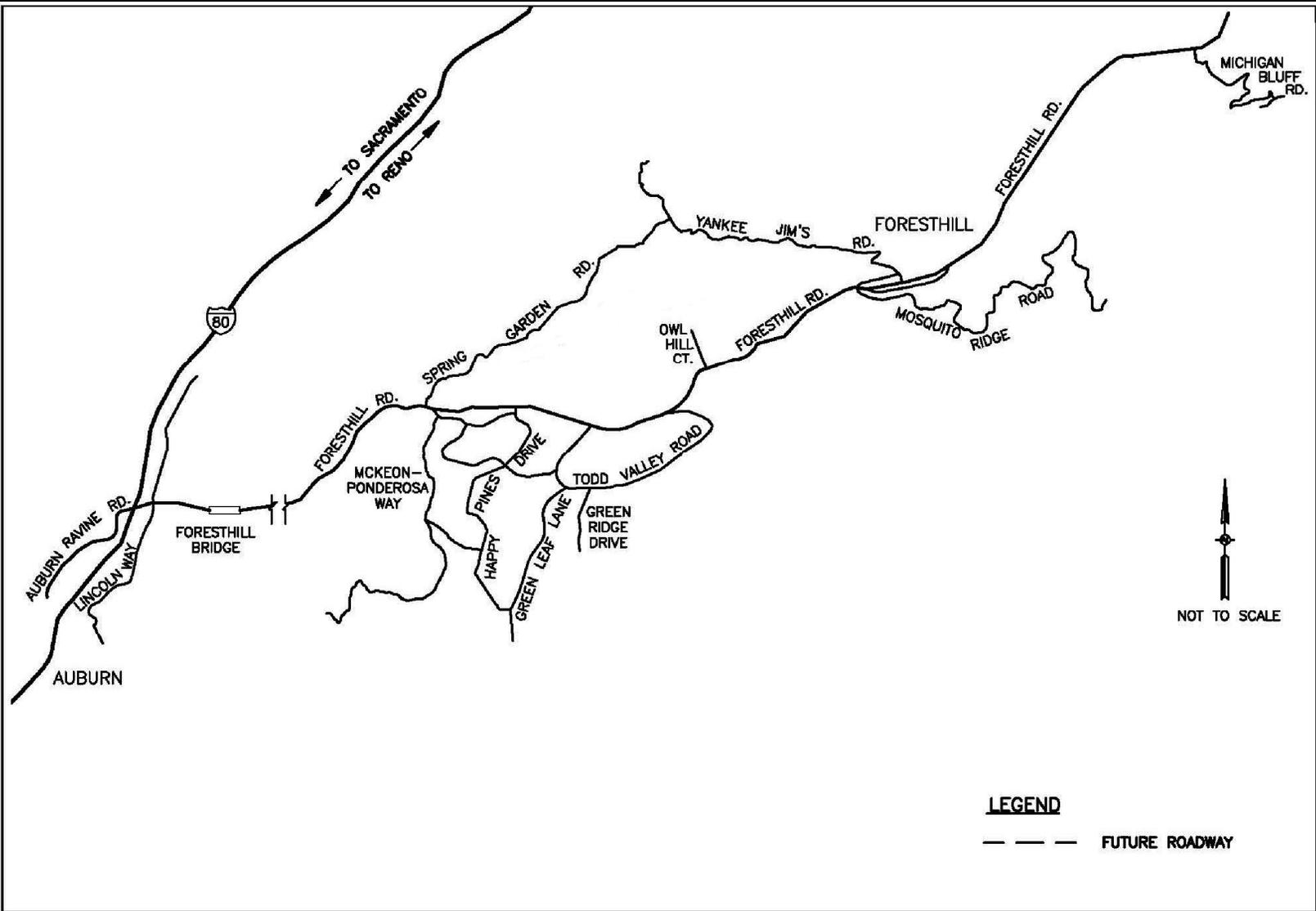


The Foresthill Divide Community Plan incorporates policies that promote the use of traffic calming measures in the Core Area. The County's adopted Neighborhood Traffic Management Program contains guidelines of standard neighborhood traffic management device designs that are to be designed according to each situation specific to the roadway and traffic conditions. Traffic calming measures will assist in the implementation of the Foresthill Community Design Guidelines, which focus on making a comfortable and safe environment for pedestrians, providing safe and convenient pedestrian connections, facilitating pedestrian circulation within and between commercial sites and nearby residential areas, and creating a "sense of arrival" at commercial entries. Three general types

of traffic calming measures can be used to control speed and inhibit cut-through traffic. These can be characterized as vertical measures, horizontal measures and narrowings. Vertical controls use vertical acceleration forces to reduce vehicle speed. Horizontal measures use lateral acceleration forces to inhibit speed, while narrowings use the perceptive sense of enclosure to discourage speeding and inhibit through traffic. Aesthetics play an important role in the acceptance of traffic calming measures.

The use of traffic calming measures in the Core Area may pose difficulties for through truck traffic on Foresthill Road. Some of the traffic calming measures described below may be incompatible with the use of snowplows.

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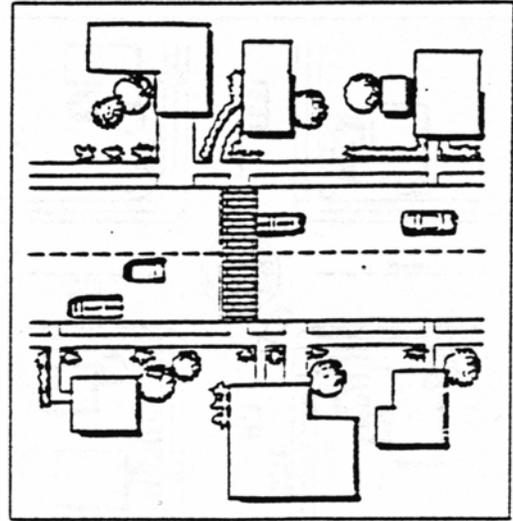
Source: MRO Engineers, 2007 / Quad Knopf, 2007



FUTURE CIRCULATION NETWORK

Figure 3.9-3

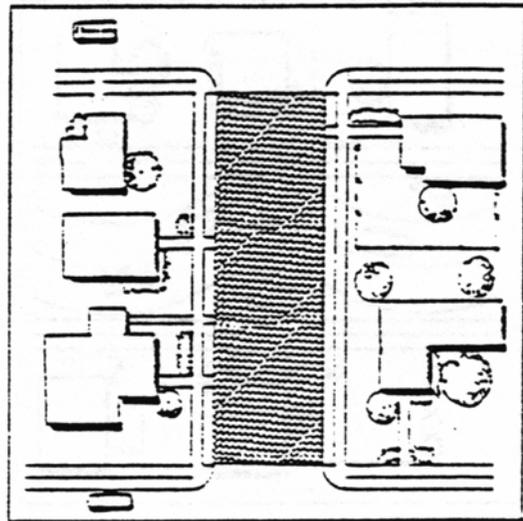
Vertical Controls. The most common form of vertical control is the speed hump or undulations. They are the most common form of traffic calming and are typically the least expensive to install and maintain, although they are not suitable in areas serviced by snowplows. Other types of vertical controls include raised intersections, raised crosswalks, and textured pavements.



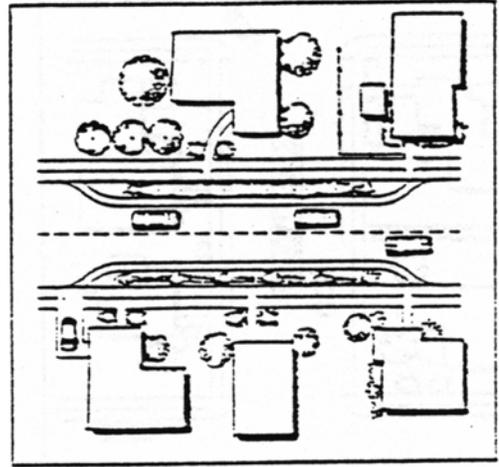
Horizontal Controls. Horizontal measures achieve their desired results by forcing drivers around horizontal curves and blocking long views of the road ahead. The most common types of horizontal measures are traffic circles, chicanes, realigned intersections, lateral shifts, single lane slow point, two lane angled slow point, mid block road closures, and traffic islands. Roundabouts (traffic circles) are an alternative to traffic signals, and often minimize traffic delays resulting from signalization. Not all intersections are good candidates for roundabouts.

Narrowings. Roadway narrowings are usually accomplished by plantings and other vertical elements to draw attention to the constriction. These narrowings include chokers, center island channelization, gateways and neckdowns. Bicycle lanes can provide narrowing of a roadway by reallocating the roadway width. They can assist in narrowing wide streets by reducing the through lane width to standard 12-foot wide lanes or narrower 10 or 11-foot lanes. Bicycle lanes alone may provide some relief from speeding vehicles.

Combination of Measures. The use of traffic calming measures often requires an approach that utilizes a variety of measures to reach the most effective reduction in speed and/or traffic volumes. Many communities have combined treatments at select locations, while other approaches include combinations of measures at different locations along the same street. Some of the measures that have been combined in communities include gateways with center islands, chokers and speed humps, center islands and chokers, traffic circles and neckdowns, and raised crosswalks with chokers. The use of multiple measures should be considered, depending on the goals of the project. For example, if the goal along a neighborhood street is to support access to a local park, the use of a choker may not provide reduced speeds that will encourage pedestrians to cross the street. The use of hybrid measures, including multiple narrowings and deflections, typically provides the needed measures to effect the desired changes.



Signings and Markings. Signings and markings should be placed in advance of and within the traffic calming measures, using conventions identified in the Manual of Uniform Traffic Control Devices (MUTCD). These include warning signs in advance of the measures, regulatory warning signs at the measures themselves, as appropriate, markers delineating island approaches, and pavement markings to guide vehicles along the desired travel paths.



Other Considerations. Emergency vehicle response is a key element in determining the appropriateness of varying traffic calming measures. Traffic calming measures, if effective, will increase the response time for emergency vehicles. A balance of reducing speeds while maintaining prompt emergency response needs to be considered when developing traffic calming measures. The Sheriff's Department and the affected fire district should be involved in potential solutions.

Traffic calming features need to be designed to accommodate public works facilities and maintenance of local streets. Calming measures such as chokers can impact the drainage along a street if not installed properly. Measures need to be designed to assure that utilities will not be affected by installation of traffic calming measures, and driveway locations need to be considered to minimize the impact for residents of the area.

Successful implementation of any traffic calming measures includes collaboration between County officials and staff and the community. Neighborhood and community input during the initial stage of analysis and design is critical to the success of the traffic calming program.

GOALS AND POLICIES

The proposed FDCP includes the following goals and policies related to transportation and circulation:

Goal 5.A.1. Provide for the safe and efficient movement of people and goods on the primary roadway serving the Foresthill Divide, i.e., Foresthill Road.

Policies

- 5.A.1-1 Establish and maintain an acceptable level of service of "D" on Foresthill Road.
- 5.A.1-2 As roadway improvements are made, seek to reduce the number of access points in developed areas on Foresthill Road and provide left-turn lanes for frequently used access points, or a two-way left turn lane for dense-access areas.
- 5.A.1-3 Proponents of new development projects should analyze the project's contribution to increased traffic on Foresthill Road and implement improvements necessary to address the increase. Mitigation of significant project-related impacts may require improvements beyond those addressed by the Placer County traffic impact mitigation fee program.

- 5.A.1-4 A Class II bikeway (on-street bike lanes with signs, striped lane markings, and pavement legends) should be implemented along the rest of Foresthill Road between Auburn and the intersection of Sugar Pine Road.
- 5.A.1-5 Community organizations, businesses and individuals are encouraged to sponsor sections of the proposed Class I bikeway, working with Placer County, community representation (Foresthill Forum) and nearby property owners to plan and develop their section. Placer County should pursue all appropriate sources of funding for development of the bikeway.
- 5.A.1-6 The County shall require the applicant/requesting agency to post notice of any non-emergency closures of Foresthill Bridge, or any section of Foresthill Road, at least 7 days before closure or as practical. Such notices shall be placed on road signs at the Foresthill Bridge, Foresthill Road at its intersection with Lincoln Way, Lower Clementine Road and Spring Garden Road. In addition, the County shall require the applicant/requesting agency to send notices of closure to local newspapers. The County shall examine requiring community compensation for closures for non-public purposes (e.g., filming).

Goal 5.A.2. Provide for safe emergency access and alternative routes onto the Foresthill Divide and to provide river and canyon access for recreational purposes.

Policies

- 5.A.2-1 Regular maintenance should occur on County Maintained Roadways. Dirt roads should be graded regularly and drainage problems corrected. Bridges should also be inspected regularly and preventive maintenance performed by Placer County. Placer County, BLM, USFS, State Parks and Recreation, CDF, and local community groups and residents should coordinate efforts and funding to maintain these roads.
- 5.A.2-2 Opportunities to improve secondary access roads with all appropriate sources of funding should be pursued.
- 5.A.2-3 Long-standing public access roadways (those used by the public for 5 years or more) such as McKeon-Ponderosa Way, Nugget Drive, Power Line Road, Indian Lane and Harrison Street shall be open and maintained (inspected annually and graded as needed) to provide emergency fire and recreational access to river canyon areas and other areas on the Divide. The County will work cooperatively with State Parks and Recreation, BLM and CDF to maintain these roads.

Goal 5.A.3. Provide for efficient, safe and pleasant circulation on local and collector roads throughout the community.

Policies

- 5.A.3-1 New development projects should incorporate collector or arterial road segments that connect to and take advantage of existing access to existing neighborhoods, if possible, and minimize the impact of egress and congestion on Foresthill Road.
- 5.A.3-2 Arterial and collector roads shall be protected from unrestricted driveway access in order to enhance secondary circulation. Possible candidates include Spring Garden Road, Happy Pines Drive, Cold Springs Road, Red Rock Drive, McKeon-Ponderosa Way, Todd Valley Road, Thomas Street, Yankee Jim’s Road and Michigan Bluff Road. These roads should have bike lanes or adjacent trails and safe bus stops that do not impede traffic.
- 5.A.3-3 Road easements in new developments shall include space for at least a five-foot multi-purpose roadside trail, or equivalent off-road trail network to enable children, equestrians, bicyclists, and pedestrians to safely circulate throughout the neighborhood.

- 5.A.3-4 Install traffic calming measures as appropriate within the Core Area to reduce speeds and create a bicycle - and pedestrian-friendly environment.

Goal 5.A.4. Enhance circulation within the Core Area.

Policies

- 5.A.4-1 The Streetscape Master Plan that has been developed should guide new development and enhancement efforts within this area.
- 5.A.4-2 New and existing businesses shall provide adequate parking for the patrons of their facilities in compliance with the Foresthill Mixed-Use Development Standards. The visual impact of parking lots shall be considered during design review.
- 5.A.4-3 The Core Area shall be a "pedestrian friendly" zone. The County right-of-way along Foresthill Road, Main Street and Soap Street shall provide space for at least a five-foot path on properties adjacent to roadways for pedestrians. This path may be such that it connects to the path on adjacent properties to provide a continuous route.
- 5.A.4-4 The Western States Trail through historic downtown is important as a historical asset and continues to provide circulation for equestrians, bicycles and pedestrians. This trail shall be preserved and incorporated into plans for enhancing circulation through Foresthill.
- 5.A.4-5 A bike and pedestrian path that connects Memorial Park to the Elementary School via Harrison and Church Streets and to the site for the proposed high school via Race Track Street should be constructed to provide safe circulation between these popular destinations.

Goal 5.A.5. Encourage public and alternative transportation to alleviate pollution and congestion.

Policies

- 5.A.5-1 New residential developments shall provide designated sites that can be used for transit stops, carpool lots and other centralized facilities.
- 5.A.5-2 New developments of 100 residential units or more shall provide public carpool parking facilities. These facilities should also be utilized for overflow parking and staging areas for community events.
- 5.A.5-3 Require developments of 100 residential units or more to consult with Placer County Department of Public Works to determine the need to provide sheltered public transit stops, with turnouts where appropriate. Consider development of turnouts in existing developed areas where roadway improvements are made or as deemed necessary for traffic flow and public safety.
- 5.A.5-4 Encourage that land use patterns and transportation systems in new growth areas be designed to provide residents and employees with the opportunity to accomplish many of their trips by walking, bicycling and using public transit.
- 5.A.5-5 Encourage opportunities in home-based businesses, telecommuting and local satellite offices, and more local employment opportunities as measures to reduce traffic. Investment in high-speed telephone, cable and satellite electronic transmission facilities should be encouraged, consistent with adopted design guidelines and land use limitations. Public education programs which focus on working from home also should be offered.

Goal 5.A.6. Maintain a balanced freight transportation system to provide for the safe and efficient movement of goods and services while minimizing impact on commute traffic.

Policies

- 5.A.6-1 If traffic signals become necessary on Foresthill Road, utilize control mechanisms that minimize the delay of through traffic, especially during non-commute hours.
- 5.A.6-2 Support Federal and State efforts to levy user charges which adequately mitigate truck traffic impacts to roadways and encourage a proportionate share to be returned for use on Divide roadways.

Goal 5.A.7. Provide emergency and public access to public lands.

Policies

- 5.A.7-1 New development projects which border public land shall provide emergency or public access to that public land utilizing existing roads or trails if possible. Access may be located along property lines. At least one access point shall be provided for each 5,000 feet of shared borders between private and public lands.

Goal 5.A.8. Reduce congestion at the intersection of Foresthill Road/Lincoln Way/I-80 Overcrossing intersection.

Policies

- 5.A.8-1 New development shall be evaluated as to its impact on the intersection.

Goal 5.A.9. Maintain a safe traffic speed in the Core Area.

Policies

- 5.A.9-1 The County shall explore and implement measures to control traffic speed on Foresthill Road in the Core Area, with the goal of maintaining the approved design speed in the area.

3.9.3 IMPACT EVALUATION CRITERIA

Appendix G of the *Guidelines for the Implementation of the California Environmental Quality Act* (CEQA Guidelines) provides that a project will normally have a significant effect on the environment if it will cause a substantial increase in traffic in relation to the existing traffic load and capacity of the street system. Roadway Levels of Service will be used as the basis for determining significant impacts.

For this analysis, the proposed project would be considered to have a significant impact on traffic operations if it would meet the following criteria:

ROADWAY SEGMENTS

- Change the level of service on the study roadway segments from acceptable levels (LOS A, B, C or D) to unacceptable levels (LOS E or F); or
- Exacerbate conditions through an increase in the volume of traffic on a study roadway segment that already operates at LOS E or F under “no project” conditions.

I-80 INTERCHANGE STUDY INTERSECTIONS

- Change the level of service at the I-80 interchange intersections from acceptable levels (LOS A, B, C, or D) to unacceptable levels (LOS E or F); or
- Exacerbate conditions through an increase in the delay value at an I-80 interchange intersection that already operates at LOS E or F under “no project” conditions.

As noted above, the evaluation criteria for the I-80 interchange intersections reflect the Caltrans operational standard, which is more stringent than is required by Placer County policy.

To evaluate the impacts associated with each individual scenario, the volume of traffic generated by each was estimated and assigned to the study area street system. The levels of service at the roadway segments and study intersections were then determined for the AM and PM peak hours.

3.9.4 IMPACTS AND MITIGATION MEASURES

Trip Generation Rates

The AM and PM peak hour trip generation estimates associated with the land uses proposed in the Foresthill Divide Community Plan were developed based on information presented in *Trip Generation* (Institute of Transportation Engineers, Seventh Edition, 2003). These standard trip generation rates were then modified and used in the analysis. Therefore, the rates shown in Table 3.9-7 have been modified to reflect the unique nature of the Foresthill community.

Table 3.9-7 Trip Generation Rates – Foresthill Divide Community Plan

Land Use	Trip Generation Unit	Daily Trip Rate	AM Peak Hour Trip Rate			PM Peak Hour Trip Rate		
			In	Out	Total	In	Out	Total
Single-Family Residential	Trips/DU ¹	5.07	0.10	0.36	0.46	0.33	0.16	0.49
Multi-Family Residential	Trips/DU	3.66	0.05	0.22	0.27	0.22	0.11	0.33
Retail	Trips/1,000 SF ²	35.5	0.37	0.23	0.60	0.95	1.22	2.17
Office	Trips/1,000 SF	8.81	1.09	0.15	1.24	0.20	0.99	1.19
Industrial	Trips/1,000 SF	5.57	0.55	0.12	0.67	0.14	0.55	0.69
High School	Trips/Student	1.71	0.28	0.13	0.41	0.07	0.07	0.14
Notes: ¹ Dwelling unit ² Square feet								

In the Year 2030 “With Forest Ranch” scenario and the Build out “With Forest Ranch” scenario, the land uses contained within the Forest Ranch property were analyzed using a separate set of trip generation rates. These rates were developed based on information provided by Placer County staff, representatives of the Forest Ranch project, and information included in previous

traffic analyses for the Forest Ranch project. The Forest Ranch trip generation rates specifically reflect the unique nature of that proposed project, particularly with regard to the trip making patterns of age-restricted communities, and are based largely on input from the project developer. The specific trip generation rates for the Forest Ranch land uses are presented in Table 3.9-8.

Table 3.9-8 Trip Generation Rates - Forest Ranch

Land Use	Trip Generation Unit	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Age-Restricted Residential	Trips/DU ¹	2.97	0.06	0.10	0.16	0.13	0.08	0.21
Single-Family Residential	Trips/DU	5.07	0.10	0.36	0.46	0.33	0.16	0.49
Retail	Trips/1,000 SF ²	77.82 ³	1.12	0.71	1.83	3.43	3.72	7.15
Medical Office	Trips/1,000 SF	36.13	1.96	0.52	2.48	1.00	2.72	3.72
Office	Trips/1,000 SF	8.81	1.09	0.15	1.24	0.20	0.99	1.19
Equestrian Center	Trips/Horse	0.70	0.10	0.10	0.20	0.10	0.10	0.2
Recreational Vehicle Park	Trips/Space	3.33	0.08	0.12	0.20	0.26	0.11	0.37
Golf Course	Trips/Hole ⁴	35.74	1.75	0.47	2.22	1.21	1.53	2.74
Notes:								
¹ Dwelling unit								
² Square feet								
³ Retail trip rates were derived using the “fitted curve equation” for “Shopping Centers” (Land Use Code 820) in the ITE <i>Trip Generation</i> manual, and do not reflect internal trips within Forest Ranch site.								
⁴ The golf course trip generation rate includes the retail, office, and industrial uses on the golf course site.								

Pass-by Trips

A portion of the trips generated by the retail land uses were assumed to be “pass-by trips.” Pass-by trips are defined as trips that are already on the adjacent roadways, with the trip to the retail land use being an intermediate stop as part of another trip. As defined in the *Trip Generation Handbook* (Institute of Transportation Engineers, Second Edition, June 2004), “Pass-by trips are attracted from traffic passing the site on an adjacent street or roadway that offers direct access to the generator.” In this analysis, a 20 percent pass-by adjustment was applied to the trip generation estimates for retail land uses within the Foresthill Divide Community Plan area. At the request of the Forest Ranch developers, the retail trip generation estimates for the Forest Ranch property were not adjusted for pass-by trips.

Tourist Traffic

Foresthill Road provides access to the Tahoe National Forest, which is a key tourist destination in the area. Based on input from U.S. Forest Service representatives, tourist traffic was assumed to consist of about 550 - 600 trips per day on Foresthill Road. Forest Service staff have further indicated that the volume of tourist traffic is expected to double in coming years. Therefore, this

analysis assumed that tourist trips will double to approximately 1,150 trips per day in Cumulative Plus Project conditions.

The daily number of tourist trips was converted into AM and PM peak hour trip estimates, as presented below:

- AM peak hour – 100 trips (40 eastbound and 60 westbound), and
- PM peak hour – 100 trips (60 eastbound and 40 westbound).

To ensure a conservative estimate, the tourist trips for the AM and PM peak hours were added as “through volume” to all of the study roadway segments on Foresthill Road in all four future year scenarios. Tourist traffic was not added to any other study roadways.

Transit Service

When the Plan area fully develops, the need for an additional bus or change in bus routes may occur. Because of the long-range nature of development, a transit study should be conducted in the long term to determine future needs. Community Plan Policy 5.A.5.3 requires developments of 100 residential units or more to consult with Placer County Department of Public Works to determine the need to provide sheltered public transit stops, with turnouts where appropriate. Development of turnouts in existing developed areas where roadway improvements are made should also be considered, as deemed necessary for traffic flow and public safety.

Park and Ride Lot

The Foresthill community currently has one designated park and ride lot. Installation of additional park and ride lots would provide motorists wishing to ride share and/or ride transit central places to meet and leave their vehicles. Additional park and ride lots would potentially increase ridesharing. Such lot(s) should be centrally located to be serviced by transit. Policy 5.A.5-2 states that new developments of 100 residential units or more shall provide public carpool parking facilities. These facilities should also be utilized for overflow parking and staging areas for community events.

Bikeway/Pedestrians

With development of the Plan area, the need for both bikeway and pedestrian facilities will increase. Sidewalks and/or pedestrian trails should be constructed as part of the frontage improvements for all developments. In addition, a bikeway master plan and trail master plan should be developed for the Plan area and incorporated in the Placer County Trails Master Plan and the Placer County Regional Bikeway Plan. The Community Plan includes policies relating to bicycle and pedestrian facilities which are listed above.

Impact 3.9-1 Increased traffic throughout the Community Plan area by the year 2030 due to development in accordance with the FDCP excluding the Forest Ranch Concept Plan.

Discussion/Conclusion: In the Year 2030, new development associated with implementation of the proposed Foresthill Divide Community Plan, excluding the Forest Ranch Concept Plan is, projected to include the following (in addition to the existing, year 2005 land use):

- Single-Family Residential – 1,413 dwelling units (DU);
- Multi-Family Residential – 20 DU;
- Retail – 90,607 square feet (SF);
- Office – 21,993 SF;
- Industrial – 78,750 SF; and
- High School – 565 students.

Trip Generation

Applying the trip generation rates listed in Table 3.9-7 to the projected land use values listed above resulted in the trip generation estimates for the Year 2030 “Without the Forest Ranch Concept Plan” scenario, which are summarized in Table 3.9-9.

As shown in Table 3.9-9, the new development expected between the Year 2005 and the Year 2030 will generate a gross total of 1,009 AM peak hour trips and 1,016 PM peak hour trips. However, the gross totals have been classified as two categories of trips: trips internal to the Foresthill Community Plan area and trips external to the Foresthill Community Plan area. In this context, external trips are those that have either an origin or a destination outside the Community Plan area (i.e., only one end of the trip – either the origin or the destination – is within the Foresthill Divide Community Plan area). The internal trips have both ends of the trip within the Plan area; in effect, a non-residential trip (i.e., retail, office, industrial, or school trip) generated within Foresthill will be matched by a residential trip within Foresthill. Generally, such internal trips will be made by Foresthill Community Plan area residents.

Internal Trips

Table 3.9-10 presents the set of internal “trip matching” assumptions that were used in the analysis of this scenario. These assumptions were developed based on trip purpose information resulting from the most recent “household travel survey” conducted by the Sacramento Area Council of Governments (SACOG). As shown in Table 3.9-9, 588 AM peak hour internal trips and 524 PM peak hour internal trips are expected in this scenario.

External Trips

Also shown in Table 3.9-9, 421 AM peak hour external trips and 492 PM peak hour external trips are projected in the Year 2030 for the “Without the Forest Ranch Concept Plan” scenario.

Table 3.9-9 Trip Generation Estimate –
Year 2030 “Without Forest Ranch Concept Plan” Scenario

Land Use	Size	Unit	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Total Trips								
Single-Family Residential	1,413	DU ¹	141	509	650	466	226	692
Multi-Family Residential	20	DU	1	4	5	4	2	6
Retail	90,607	SF ²	34	21	55	86	111	197
	<i>-20% Pass-by</i>		7	4	11	17	22	39
	<i>Net Retail Trips</i>		27	17	44	69	89	158
Office	21,993	SF	24	3	27	4	22	26
Industrial	78,750	SF	43	9	52	11	43	54
High School	565	Students	158	73	231	40	40	80
Gross Total			394	615	1,009	594	422	1,016
Internal Trips								
Single-Family Residential	1,413	DU	87	203	290	153	106	259
Multi-Family Residential	20	DU	1	3	4	2	1	3
Retail	90,607	SF	24	15	39	62	80	142
Office	21,993	SF	14	2	16	2	13	15
Industrial	78,750	SF	26	5	31	7	26	33
High School	565	Students	142	66	208	36	36	72
Total Internal Trips			294	294	588	262	262	524
Net External Trips								
Single-Family Residential	1,413	DU	54	306	360	313	120	433
Multi-Family Residential	20	DU	0	1	1	2	1	3
Retail	90,607	SF	3	2	5	7	9	16
Office	21,993	SF	10	1	11	2	9	11
Industrial	78,750	SF	17	4	21	4	17	21
High School	565	Students	16	7	23	4	4	8
Total External Trips			100	321	421	332	160	492
Notes:								
¹ Dwelling units								
² Square Feet								

**Table 3.9-10 Internal “Trip Matching” Percentages
Year 2030 “Without Forest Ranch” Scenario**

Non-residential Land Use	Internal Project Trips (Trips Matched with a Foresthill Residential Trip)	External Project Trips (Trips Beginning or Ending Outside Foresthill)
Retail	90 percent	10 percent
Office	60 percent	40 percent
Industrial	60 percent	40 percent
Schools	90 percent	10 percent
Reference: Sacramento Area Council of Governments, “2000 Sacramento Area Household Travel Survey – Final Report,” November 2000.		

Trip Distribution

The internal trips, between residential and non-residential land uses within the Foresthill Community Plan Area, were distributed to the roadway network proportionately to where in the Plan area the land uses will be located.

As for distribution of the external trips, 95 percent of the external trips were assumed to be oriented to and from the west on Foresthill Road, and 5 percent of the trips were assumed to travel to and from the east on Foresthill Road. At the I-80 interchange study intersections, the external trips were further distributed. Because traffic patterns are expected to change in the future, the directional distribution of the project-generated external trips was based on projected travel patterns in the study area. The specific trip distribution percentages were based on information generated by the Placer County General Plan travel demand forecasting model. Figure 3.9-4 illustrates the detailed distribution of project-generated external trips at the study intersections.

Project Traffic Assignment

For the study roadway segments, the internal and external trips were added to the existing traffic volumes, with the result being the “Cumulative Plus Project” traffic volumes for the Year 2030 “Without the Forest Ranch Concept Plan” scenario. These roadway segment traffic volumes are presented in Table 3.9-11.

For the study intersections, the external trips were added to a set of “Cumulative No Project” base traffic volumes, rather than existing traffic volumes. Because the study intersections are not located in the Foresthill Divide Community Plan area, the cumulative conditions volumes need to account for growth in the surrounding Auburn/Bowman Community Plan area. The Cumulative No Project volumes were developed using the Placer County General Plan travel demand forecasting model. The addition of the Plan-generated traffic volumes resulted in the “Cumulative Plus Project” traffic volumes for the Year 2030 “Without Forest Ranch” scenario. Figure 3.9-5. displays the intersection traffic volumes as well as the future lane configurations.

Table 3.9-11 Roadway Segment Level of Service Summary¹ – Cumulative + Project Conditions Year 2030 “Without Forest Ranch” Scenario

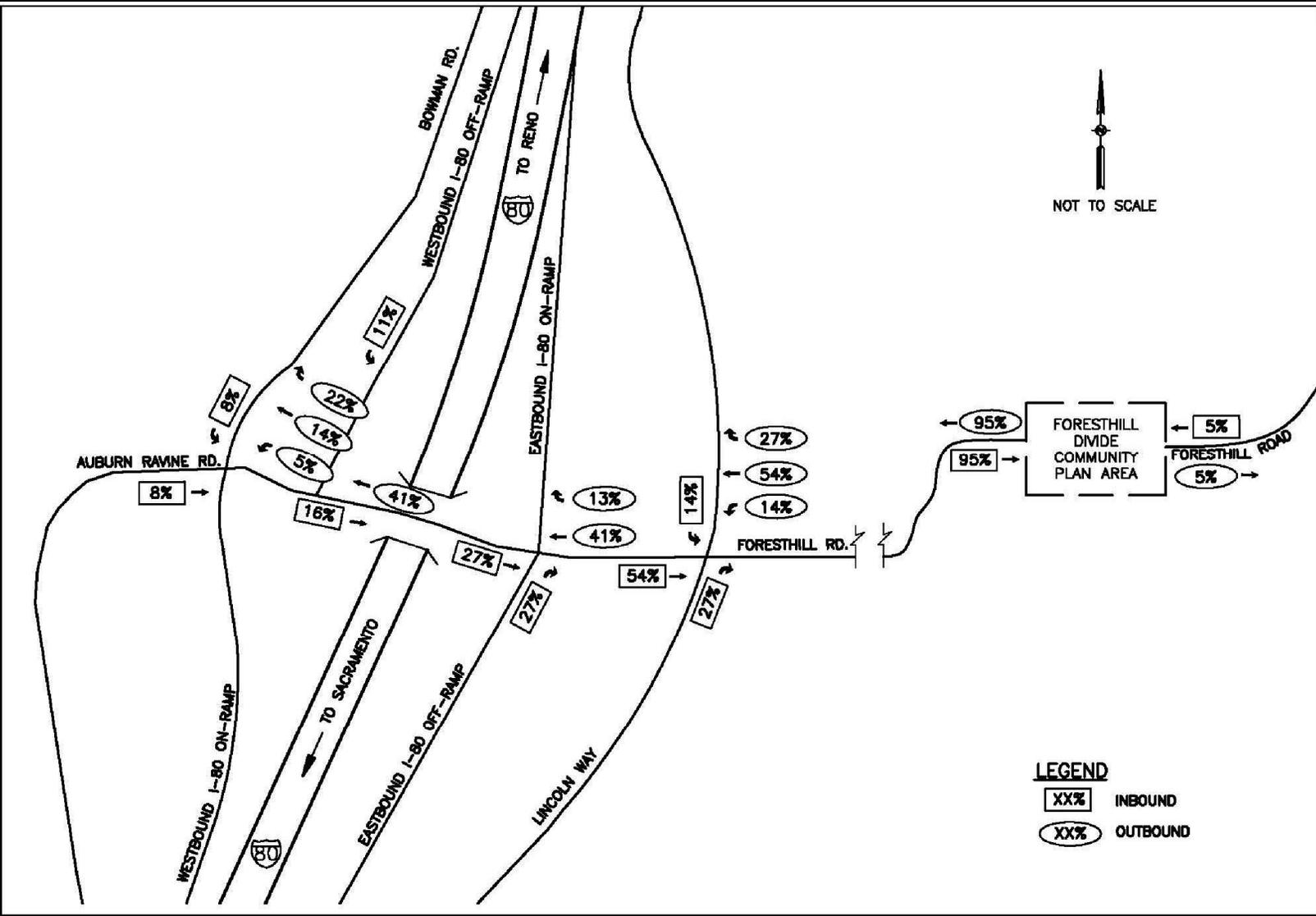
Roadway Segment	Direction	AM Peak Hour		PM Peak Hour	
		Peak Hour Volume	LOS ²	Peak Hour Volume	LOS
Foresthill Rd. – Foresthill Bridge to Spring Garden Rd.	Eastbound	253	C	899	D
	Westbound	888	E	341	D
Foresthill Rd. – Spring Garden Rd. to Todd Valley Rd. (West)	Eastbound	328	B	573	C
	Westbound	605	E ³	383	C
Foresthill Rd. – Todd Valley Rd. (West) to Owl Hill Ct.	Eastbound	436	C	471	B
	Westbound	494	D	406	D
Foresthill Rd. – Owl Hill Ct. to Yankee Jim’s Rd.	Eastbound	227	C	287	C
	Westbound	295		193	
Foresthill Rd. – Yankee Jim’s Rd. to Michigan Bluff Rd.	Eastbound	73	B	123	B
	Westbound	119		88	
Foresthill Road – East of Michigan Bluff Road	Eastbound	66	B	84	B
	Westbound	83		65	
McKeon-Ponderosa Way	Northbound	163	B	46	C
	Southbound	30		174	
Spring Garden Road	Northbound	12	B	65	B
	Southbound	60		30	
Happy Pines Drive	Northbound	172	C	71	C
	Southbound	62		161	
Todd Valley Road (West)	Northbound	319	D	156	D
	Southbound	78		266	
Todd Valley Road (East)	Northbound	32	A	34	A
	Southbound	26		26	
Mosquito Ridge Road	Northbound	18	A	25	A
	Southbound	16		27	
Yankee Jim’s Road	Northbound	8	A	24	A
	Southbound	23		13	
Main Street	Eastbound	33	A	60	B
	Westbound	20		50	
Michigan Bluff Road	Northbound	15	A	11	A
	Southbound	7		20	
Race Track Street	Eastbound	34	A	68	B
	Westbound	44		35	

Notes:
¹ Reference: Transportation Research Board, *Highway Capacity Manual*, 2000.
² Level of service.
³ Shading denotes an unacceptable level of service.

Roadway Segment Level of Service

The roadway segment levels of service under the Year 2030 “Without Forest Ranch” scenario are presented in Table 3.9-11. The levels of service for the Secondary/Feeder Roads and the Local Access Roads were determined using the level of service thresholds presented in Table 3.9-3 and Table 3.9-4, respectively.

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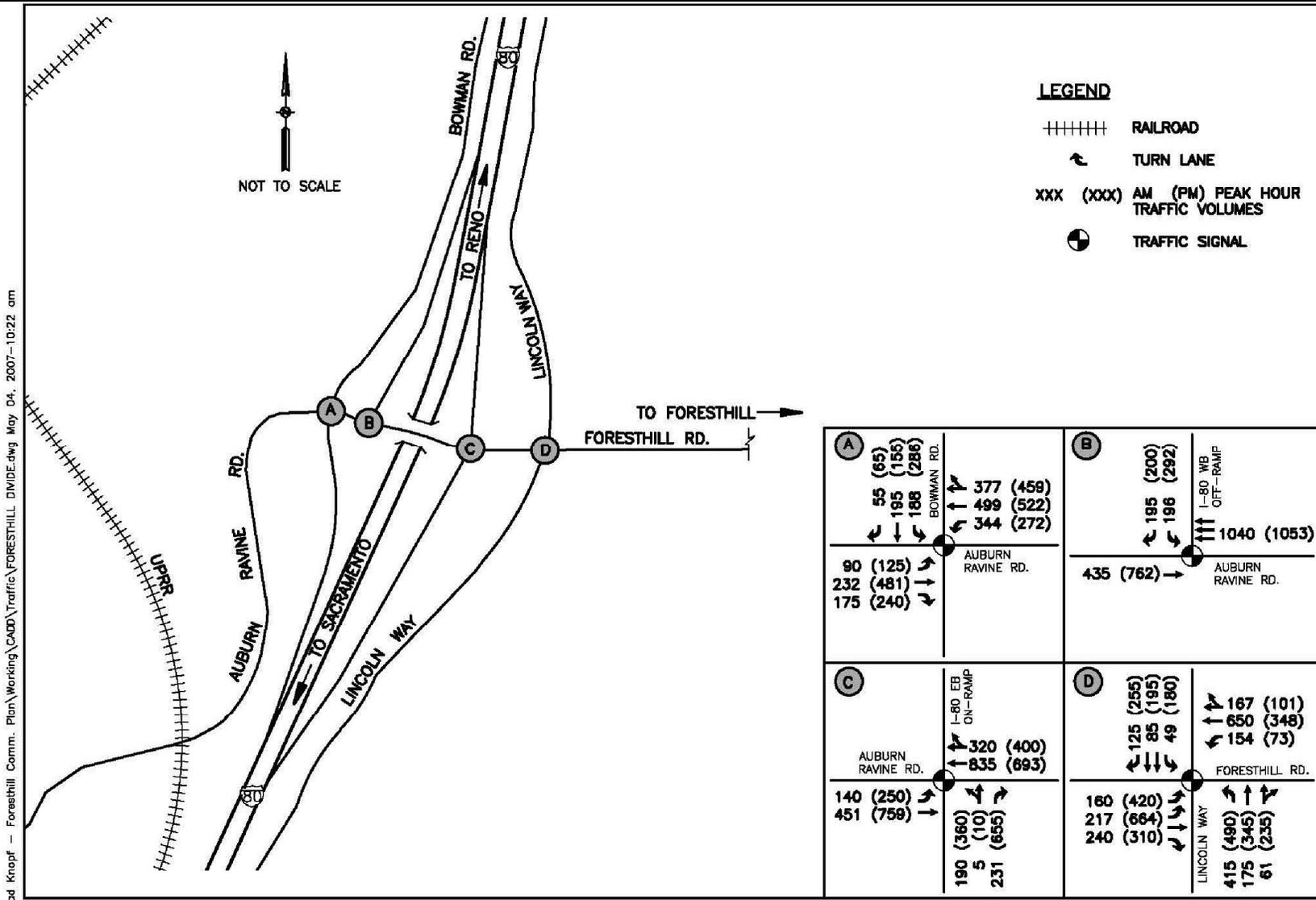


Source: MRO Engineers, 2007 / Quad Knopf, 2007



TRIP DISTRIBUTION
EXTERNAL TRIPS

Figure 3.9-4



Source: MRO Engineers, 2007 / Quad Knopf, 2007



**INTERSECTION PEAK HOUR TRAFFIC VOLUMES
CUMULATIVE + PROJECT CONDITIONS
YEAR 2030 "WITHOUT FOREST RANCH" SCENARIO**

Figure 3.9-5

During the AM peak hour, two of the study roadway segments are projected to operate at unacceptable levels of service, according to the County's level of service policy. The westbound segments of Foresthill Road between the Foresthill Bridge and Todd Valley Road are expected to operate at LOS E, which exceed to LOS standard of D.

In the PM peak hour all roadway operate at an acceptable LOS of D or better.

Based on the conclusion that at least some roadway segments will operate at unacceptable levels of service during peak hour periods this impact would be *potentially significant*.

Mitigation Measures

Although implementation of the following mitigation measures would reduce this impact to a *less-than-significant* level, until funding to accomplish the improvements has been secured the impacts will remain potentially significant. If the identified improvements are not funded, this impact would remain *significant and unavoidable*.

3.9-1a *Foresthill Road between the Foresthill Bridge and Spring Garden Road (10.8 miles long): Increase the length of passing lanes in the westbound direction from 1.3 miles to 1.5 miles (including tapers). Implementation of this measure will improve conditions to LOS D in both peak hours.*

3.9-1b *Foresthill Road between Spring Garden Road and Todd Valley Road (West) (1.7 miles long): Construct 0.2 miles of passing lanes (including tapers) in the westbound direction. This improvement results in LOS D in the AM peak hour and LOS C in the PM peak hour.*

Impact 3.9-2 Increased traffic throughout the Community Plan area by the year 2030 due to development in accordance with the FDCP including the Forest Ranch Concept Plan.

Discussion/Conclusion: The Year 2030 "With Forest Ranch" scenario includes the development of land uses in the Foresthill community as well as development of the Forest Ranch Concept Plan property. However, it is not a simple combination of the Foresthill land uses described in Impact statement 3.9-1 above and the Forest Ranch Concept Plan project. Primarily, this is because 158 single-family dwelling units are assumed to exist in both the Year 2030 "With Forest Ranch" and Year 2030 "Without Forest Ranch" scenarios. Under the "with" scenario, these dwelling units are part of Forest Ranch Concept Plan, while under the "without" scenario those units were included in the Foresthill Divide Community Plan.

Therefore, in the Year 2030 "With the Forest Ranch Concept Plan" scenario, the following level of incremental development is proposed within the Foresthill Divide Community Plan area:

- Single-Family Residential – 1,255 DU;
- Multi-Family Residential – 20 DU;
- Retail – 90,607 SF;
- Office – 21,993 SF;

- Industrial – 78,750 SF; and
- High School – 565 students.

Note that these land use values are identical to the Year 2030 “Without the Forest Ranch Concept Plan” scenario, with the exception of the 158 single-family DU referred to above (and shown below as part of the Forest Ranch Concept Plan).

The following describes the additional land uses associated with the Forest Ranch Concept Plan project:

- Age-Restricted Residential – 1,700 DU;
- Single-Family Residential – 158 DU;
- Retail – 67,762 SF;
- Medical Office – 34,592 SF;
- Office – 23,092 SF (to be located off-site of the Forest Ranch property, but within Foresthill);
- Equestrian Center – 50 horses;
- Recreational Vehicle (RV) Park – 100 RV spaces; and
- Golf Course, including: an 18-hole course; 2,500 SF of retail; 2,500 SF of office; and 5,000 SF of industrial.

Trip Generation

Applying the trip generation rates in Tables 3.9-7 and 3.9-8 to the land uses listed above resulted in the trip generation estimates for the Year 2030 “With the Forest Ranch Concept Plan” scenario, as summarized in Table 3.9-12. As described earlier, a 20 percent pass-by adjustment was applied to the Community Plan-generated retail trips, while the Forest Ranch retail land uses were not adjusted to reflect pass-by trips (as requested by the Forest Ranch developers).

The land uses proposed in the Year 2030 “With Forest Ranch” scenario will generate a gross total of about 1,403 AM peak hour trips and 1,623 PM peak hour trips. In this case, the gross totals in Table 3.9-12 include all trips generated by the Foresthill Divide Community Plan and the trips generated by Forest Ranch that are “external” to Forest Ranch.

Forest Ranch Internal Trips

To be consistent with previous traffic studies for Placer County projects that are considered to be similar to the Forest Ranch project (e.g., Bickford Ranch), the following assumptions concerning internal trip matching were incorporated into this analysis:

- An internal trip matching factor of two-thirds (i.e., 66.67 percent) was applied to all non-residential land uses within Forest Ranch (except the RV Park); that is, it was assumed that two-thirds of the non-residential peak-hour trips will match a residential trip entirely within Forest Ranch.
- The remaining one-third of the non-residential Forest Ranch trips will have either an origin or a destination outside of Forest Ranch, and possibly (but not necessarily) outside of the Foresthill community. To determine which Forest Ranch trips would remain internal to the Foresthill area, “external” Forest Ranch trips were then subject to the same assumptions regarding internal trip matching as the Community Plan-generated trips.
- The internal Forest Ranch trips were assumed to occur completely within that project and were eliminated from the roadway segment analysis altogether, as these trips would never reach the study roadway segments.
- The RV Park land use was assumed to generate trips that have one trip end entirely external to both Forest Ranch and Foresthill.

**Table 3.9-12 Trip Generation Estimate -
Year 2030 “With Forest Ranch” Scenario**

Land Use	Size	Unit	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Total Trips								
SF Residential (Foresthill)	1,255	DU ¹	125	452	577	414	201	615
SF Residential (FR ²)	158	DU	12	47	59	30	8	38
<i>SF Residential Subtotal</i>	1,413	DU	137	499	636	444	209	653
Multi-Family Residential	20	DU	1	4	5	4	2	6
Age-Restricted Res.	1,700	DU	102	170	272	221	136	357
Retail (Foresthill)	90,607	SF ³	34	21	55	86	111	197
	<i>-20% Pass-by</i>		7	4	11	17	22	39
	<i>Net Retail Trips</i>		27	17	44	69	89	158
Retail (FR)	67,762	SF	25	16	41	77	84	161
<i>Retail Subtotal</i>	158,369	SF	52	33	85	146	173	319
Office (Foresthill)	21,993	SF	24	3	27	4	22	26
Office (FR Off-site)	23,092	SF	25	3	28	5	23	28
<i>Office Subtotal</i>	45,085	SF	49	6	55	9	45	54
Medical Office (FR)	34,592	SF	23	6	29	12	31	43
Industrial	78,750	SF	43	9	52	11	43	54
Golf Course (FR)	18	Holes	11	3	14	7	9	16
Equestrian Center (FR)	50	Horses	2	2	4	2	2	4
RV Park (FR)	100	Spaces	8	12	20	26	11	37
High School	565	Students	158	73	231	40	40	80

Land Use	Size	Unit	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Gross Total			586	817	1,403	922	701	1,623
<i>Internal Trips</i>								
Single-Family Residential	1,413	DU	65	203	268	185	118	303
Multi-Family Residential	20	DU	0	2	2	2	1	3
Age-Restricted Resid'l.	1,700	DU	48	69	117	92	77	169
Retail	158,369	SF	47	30	77	131	156	287
Office	45,085	SF	29	4	33	5	27	32
Medical Office	34,592	SF	21	5	26	11	28	39
Industrial	78,750	SF	26	5	31	7	26	33
Golf Course	18	Holes	7	2	9	4	5	9
Equestrian Center	50	Horses	2	2	4	2	2	4
RV Park	100	Spaces	0	0	0	0	0	0
High School	565	Students	142	65	207	36	35	71
Total Internal Trips			387	387	774	475	475	950
<i>Net External Trips</i>								
Single-Family Residential	1,413	DU	72	296	368	259	91	350
Multi-Family Residential	20	DU	1	2	3	2	1	3
Age-Restricted Res.	1,700	DU	54	101	155	129	59	188
Retail	158,369	SF	5	3	8	15	17	32
Office	45,085	SF	20	2	22	4	18	22
Medical Office	34,592	SF	2	1	3	1	3	4
Industrial	78,750	SF	17	4	21	4	17	21
Golf Course	18	Holes	4	1	5	3	4	7
Equestrian Center	50	Horses	0	0	0	0	0	0
RV Park	100	Spaces	8	12	20	26	11	37
High School	565	Students	16	8	24	4	5	9
Total External Trips			199	430	629	447	226	673
Notes:								
¹ Dwelling unit								
² The designation (FR) refers to Forest Ranch land use trip generation estimates. In the <i>Internal Trips</i> and <i>Net External Trips</i> portions of the table, the Foresthill and Forest Ranch land uses were combined into one category.								
³ Square feet								

Foresthill Internal Trips

The gross trip generation totals from Table 3.9-12 were further segregated into trips internal to the Foresthill community and trips that have one end external to the Foresthill community. The trips internal to Foresthill are assumed to have both ends of the trip located entirely within the Plan area. In this scenario, however, one end of an internal trip could be in either Foresthill or Forest Ranch. As shown in Table 3.9-12, 774 AM peak hour internal trips and 950 PM peak hour internal trips are expected in the Year 2030 “With Forest Ranch” scenario.

Generally, the same internal “trip matching” percentages from the previous scenario were used for the Foresthill community land uses. This scenario does, however, include additional trip matching assumptions for the land uses directly associated with Forest Ranch. These are described in detail in Table 3.9-14.

Foresthill External Trips

As presented in Table 3.9-13, 629 AM peak hour external trip and 673 PM peak hour external trips are expected in this scenario. In this case, an external trip will have one end of the trip in either Foresthill or Forest Ranch, and one end of the trip entirely outside of the Community Plan area.

**Table 3.9-13 Internal “Trip Matching” Percentages -
Year 2030 “With Forest Ranch” Scenario**

Non-residential Land Use	Internal Project Trips (Trips Matched with a Foresthill Residential Trip)	External Project Trips (Trips Beginning or Ending Outside Foresthill)
Retail	90 percent	10 percent
Medical Office	90 percent	10 percent
Office	60 percent	40 percent
Industrial	60 percent	40 percent
Schools	90 percent	10 percent
Equestrian Center	90 percent	10 percent
Recreation Vehicle Park	0 percent	100 percent
Golf Course	60 percent	40 percent
Reference: Sacramento Area Council of Governments, “2000 Sacramento Area Household Travel Survey – Final Report,” November 2000.		

Trip Distribution

As in the previous scenario, the internal trip pairs were distributed to the roadway network proportionately to where in the Plan area the land uses will be located.

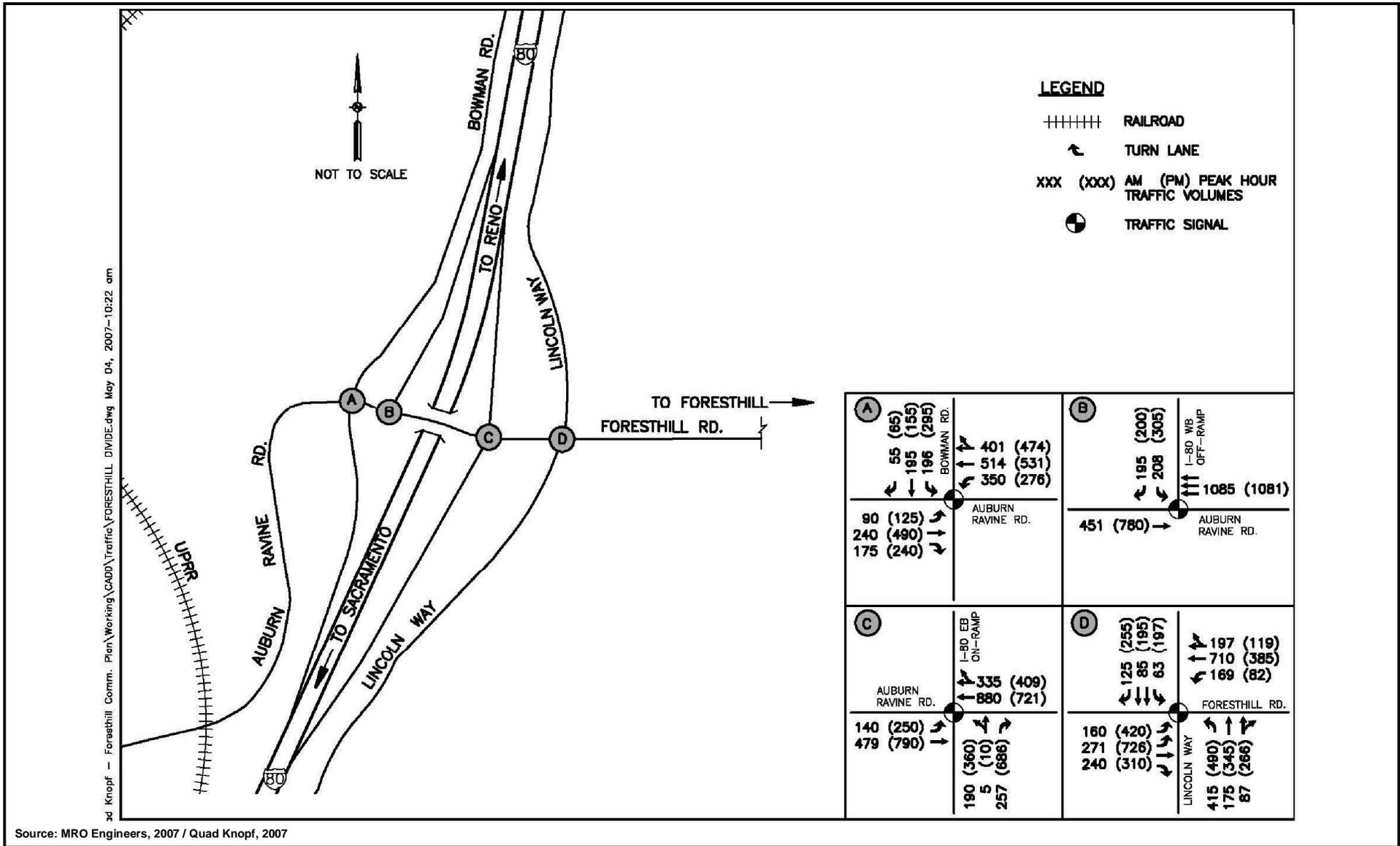
For the external trips leaving the Community Plan area, 95 percent of the trips were assumed to be oriented to and from the west on Foresthill Road, while 5 percent would travel to and from the east. At the study intersections, the trip distribution used in the Year 2030 “Without Forest Ranch” scenario was also used for the Year 2030 “With Forest Ranch” scenario. Figure 3.9-4 presents the detailed trip distribution for the I-80 interchange.

Project Traffic Assignment

The traffic associated with the Year 2030 “With the Forest Ranch Concept Plan” scenario was added to the existing roadway segment traffic volumes and the “Cumulative No Project” intersection volumes. The resulting “Cumulative Plus Project” traffic volumes for the roadway segments are displayed in Table 3.9-14. Figure 3.9-6 illustrates the “Cumulative Plus Project” intersection traffic volumes and lane configurations for the Year 2030 “With the Forest Ranch Concept Plan” scenario.

Table 3.9-14 Roadway Segment Level of Service Summary¹ – Cumulative + Project Conditions Year 2030 “With Forest Ranch” Scenario

Roadway Segment	Direction	AM Peak Hour		PM Peak Hour	
		Peak Hour Volume	LOS ²	Peak Hour Volume	LOS
Foresthill Road – Foresthill Bridge to Spring Garden Road	Eastbound	347	C	1,009	D
	Westbound	993	E ³	405	D
Foresthill Road – Spring Garden Road to Todd Valley Road (West)	Eastbound	405	B	676	C
	Westbound	684	E	455	D
Foresthill Road – Todd Valley Road (West) to Owl Hill Court	Eastbound	509	C	598	B
	Westbound	571	D	501	D
Foresthill Road – Owl Hill Court to Yankee Jim’s Road	Eastbound	338	C	459	C
	Westbound	416		330	
Foresthill Road – Yankee Jim’s Road to Michigan Bluff Road	Eastbound	80	B	126	B
	Westbound	124		92	
Foresthill Rd. – East of Michigan Bluff Rd.	Eastbound	71	B	87	B
	Westbound	88		71	
McKeon-Ponderosa Way	Northbound	165	B	48	C
	Southbound	31		176	
Spring Garden Road	Northbound	24	B	94	B
	Southbound	82		44	
Happy Pines Drive	Northbound	167	C	64	C
	Southbound	61		150	
Todd Valley Road (West)	Northbound	316	D	152	D
	Southbound	76		261	
Todd Valley Road (East)	Northbound	33	B	33	A
	Southbound	28		24	
Mosquito Ridge Road	Northbound	20	A	34	B
	Southbound	24		31	
Yankee Jim’s Road	Northbound	28	B	70	B
	Southbound	57		44	
Main Street	Eastbound	37	A	59	B
	Westbound	21		52	
Michigan Bluff Road	Northbound	15	A	11	A
	Southbound	7		20	
Race Track Street	Eastbound	44	B	87	B
	Westbound	61		46	
Notes:					
¹ Reference: Transportation Research Board, <i>Highway Capacity Manual</i> , 2000.					
² Level of service.					
³ Shading denotes an unacceptable level of service.					



Source: MRO Engineers, 2007 / Quad Knopf, 2007



INTERSECTION PEAK HOUR TRAFFIC VOLUMES
 CUMULATIVE + PROJECT CONDITIONS
 YEAR 2030 "WITH FOREST RANCH" SCENARIO

Figure 3.9-6

Roadway Segment Level of Service

The Year 2030 “With Forest Ranch” scenario roadway segment traffic volumes are presented in Table 3.9-14.

The addition of traffic associated with the Forest Ranch project will add traffic to (and, therefore, exacerbate operations on) the study roadway segments that are already expected to fall short of the LOS D requirement in the Year 2030 “Without Forest Ranch” scenario. Specifically, in the AM peak hour, the westbound direction of Foresthill Road between the Foresthill Bridge and Todd Valley Road is again expected to operate at LOS E. The remaining study roadway segments are expected to operate at acceptable levels of service during this peak hour.

In the PM peak hour all roadway operate at an acceptable LOS of D or better

Based on the conclusion that at least some roadway segments will operate at unacceptable levels of service during peak hour periods this impact would be *potentially significant*.

Mitigation Measures

Although implementation of the following mitigation measures would reduce this impact to a *less-than-significant* level, until funding to accomplish the improvements has been secured the impacts will remain *potentially significant*. If the identified improvements are not funded, this impact would remain *significant and unavoidable*.

In the Year 2030 under the “With the Forest Ranch Concept Plan” scenario, two segments on Foresthill Road between the Foresthill Bridge and Todd Valley Road are not expected to meet the County’s LOS D requirement. The mitigation measures listed below are recommended to improve the level of service on those study roadway segments. In this scenario, the Forest Ranch project is adding traffic to roadway segments and intersections that are already expected to operate unacceptably in the “without the forest Ranch Concept Plan” scenario. As such, the Forest Ranch project is responsible for a share of the cost of needed roadway improvements. In the instances where the Forest Ranch project directly causes the significant impact to traffic operations, the project will be responsible for 100 percent of the cost of improvements. For each mitigation measure listed below, the Forest Ranch “fair share” contribution is described.

3.9-2a *Foresthill Road between the Foresthill Bridge and Spring Garden Road (10.8 miles long): Increase the length of passing lanes in the westbound direction from existing 1.3 miles to 1.8 miles (including tapers). This improvement would result in LOS D during both peak hours. Forest Ranch would be responsible for 23 percent of the cost of 0.2 miles of passing lanes and 100 percent of the cost of the additional 0.3 miles of passing lanes beyond what would be needed in the “without” scenario.*

3.9-2b *Foresthill Road between Spring Garden Road and Todd Valley Road (West) (1.7 miles long): Construct 0.2 miles of passing lanes (including tapers) in the westbound direction. This improvement results in LOS D in the AM peak hour and LOS C in the PM peak hour. Forest Ranch would be responsible for 24 percent of the cost of this improvement.*

Impact 3.9-3 Potential decrease in Level of Service at key intersections at the I-80/Auburn Ravine Road/Foresthill Road interchange by the year 2030 due to increased traffic in the Community Plan area excluding the Forest Ranch Concept Plan.

Discussion/Conclusion:

Intersection Level of Service

The AM and PM peak hour intersection level of service results are presented in Table 3.9-15. The addition of traffic generated by the proposed Community Plan is expected to increase delay at all four study intersections during the AM peak hour. However, all four study intersections will continue to operate at an acceptable LOS D or better.

During the PM peak hour, three of the four study intersections are projected to operate acceptably. The Auburn Ravine Road/Foresthill Road/Lincoln Way intersection is expected to operate at LOS F, and is therefore unacceptable according to the Caltrans LOS D policy.

Table 3.9-15 Intersection Level of Service Summary¹ – Cumulative + Project Conditions Year 2030 “Without Forest Ranch” Scenario

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		DELAY ²	LOS ³	DELAY	LOS
Auburn Ravine Road/Bowman Road/I-80 Westbound On-ramp	Signal	24.6	C	26.4	C
Auburn Ravine Road/I-80 Westbound Off-ramp	Signal	13.8	B	10.6	B
Auburn Ravine Road/I-80 Eastbound Ramps	Signal	21.2	C	48.9	D
Auburn Ravine Road/Foresthill Road/Lincoln Way	Signal	49.9	D	> 80.0	F ⁴

Notes:

- ¹ Reference: Transportation Research Board, *Highway Capacity Manual*, 2000.
- ² Seconds/vehicle
- ³ Level of service
- ⁴ Shading denotes an unacceptable level of service

In addition to the roadway segments mentioned above, the Foresthill Divide Community Plan will cause a **potentially significant** impact to operations at the Auburn Ravine Road/Foresthill Road/Lincoln Way intersection during the PM peak hour. Implementation of the following mitigation measure at the Auburn Ravine Road/Foresthill Road/Lincoln Way intersection will result in LOS D during both peak hours and reduce the impact to a **less than significant** level.

Mitigation Measure

Although implementation of the following mitigation measure at the Auburn Ravine Road/Foresthill Road/Lincoln Way intersection will result in LOS D during both peak hours and reduce the impact to a *less than significant* level, until funding to accomplish the improvement has been secured the impact will remain *potentially significant*. If the identified improvement is not funded, this impact would remain *significant and unavoidable*.

3.9-3 *Modify the westbound approach to provide a dedicated right-turn lane and modify the northbound approach to include dual left-turn lanes. This improvement will result in LOS D in both peak hours.*

Impact 3.9-4 Potential decrease in Level of Service at key intersections at the I-80/Auburn Ravine Road/Foresthill Road interchange by the year 2030 due to increased traffic in the Community Plan area including the Forest Ranch Concept Plan

Discussion/Conclusion:

Intersection Level of Service

The AM and PM peak hour intersection levels of service for this scenario are presented in Table 3.9-16.

During the AM peak hour, all four study intersections are expected to continue operating at acceptable levels of service (i.e., LOS D or better) with the addition of traffic generated by Forest Ranch. The Auburn Ravine Road/Bowman Road/I-80 Westbound On-ramp intersection and the Auburn Ravine Road/I-80 Eastbound Ramps intersection are projected to operate at LOS C. The Auburn Ravine Road/I-80 Westbound Off-ramp intersection is expected to operate at LOS B, and the Auburn Ravine Road/Foresthill Road/Lincoln Way intersection will operate at LOS D.

In the PM peak hour, two of the four study intersections will not meet the Caltrans Level of Service D requirement. The Auburn Ravine Road/Foresthill Road/Lincoln Way intersection is expected to operate at LOS F, the same as in the Year 2030 “Without Forest Ranch” scenario. The traffic generated by Forest Ranch is projected to degrade the level of service at the Auburn Ravine Road/I-80 Eastbound Ramps intersection from LOS D to LOS E, thereby resulting in a significant impact to traffic operations.

Table 3.9-16 Intersection Level of Service Summary¹ – Cumulative + Project Conditions Year 2030 “With Forest Ranch” Scenario

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Delay ²	LOS ³	Delay	LOS
Auburn Ravine Road/Bowman Road/I-80 Westbound On-ramp	Signal	24.3	C	26.5	C
Auburn Ravine Road/I-80 Westbound Off-ramp	Signal	14.0	B	10.5	B
Auburn Ravine Road/I-80 Eastbound Ramps	Signal	22.1	C	65.2 ⁴	E
Auburn Ravine Road/Foresthill Road/Lincoln Way	Signal	52.6	D	> 80.0	F
Notes:					
¹ Reference: Transportation Research Board, <i>Highway Capacity Manual</i> , 2000.					
² Seconds/vehicle					
³ Level of service					
⁴ Shading denotes an unacceptable level of service					

As mentioned previously, the traffic generated by the Community Plan in combination with the traffic generated by Forest Ranch will result in *potentially significant* impacts to traffic operations at two of the study intersections in the PM peak hour. The mitigation measures described below are recommended to improve the level of service at these intersections to a *less than significant* level. However, until funding to accomplish the improvements has been secured the impacts will remain *potentially significant*. If the identified improvements are not funded, this impact would remain *significant and unavoidable*.

Mitigation Measures

- 3.9-4a *Auburn Ravine Road/I-80 Eastbound Ramps intersection – Modify the westbound approach to convert the shared through/right-turn lane to separate through and right-turn lanes. This improvement will provide LOS B in the AM peak hour and LOS D in the PM peak hour. Forest Ranch Responsibility: 100 percent.*
- 3.9-4b *Auburn Ravine Road/Foresthill Road/Lincoln Way intersection – Modify the westbound approach to provide a dedicated right-turn lane; modify the northbound approach to include dual left-turn lanes; and convert the eastbound right-turn lane into a shared through/right-turn lane that a receiving lane will be required on eastern leg. The eastbound measure is new to this scenario; the westbound and northbound improvements were also called for in the “Without Forest Ranch” scenario. Forest Ranch Responsibility: 100 percent of the eastbound approach improvements, and 27 percent of the westbound and northbound improvements. This modification will result in LOS D in both peak hours.*

Impact 3.9-5 Increased traffic throughout the Community Plan area at build out due to development in accordance with the FDCP excluding the Forest Ranch Concept Plan.

Discussion/Conclusion: This scenario analyzes the potential build out of the proposed Foresthill Divide Community Plan. According to information provided by Placer County Planning Department staff, the following levels of new development in the Foresthill Community are projected by the theoretical build out year of the Plan:

- Single-Family Residential – 4,855 DU;
- Multi-Family Residential – 314 DU;
- Retail – 350,000 SF;
- Office – 180,954 SF;
- Industrial – 1,638,443 SF; and
- High School – 565 students.

Trip Generation

The trip generation estimates for the Build out “Without the Forest Ranch Concept Plan” scenario were determined utilizing the trip generation rates summarized in Table 3.9-7 and the land use amounts listed above. Table 3.9-17 presents the detailed trip generation estimates for the land uses proposed in this scenario, including the gross trip generation totals, the internal trips, and the net external trips.

As described in Table 3.9-17, a gross total of 4,040 AM peak hour trips and 4,516 PM peak hour trips are projected for the Build out “Without the Forest Ranch Concept Plan” scenario.

Internal Trips

The gross totals presented in the top section of Table 3.9-17 were separated into internal trips and external trips for each land use category. As shown in the mid-section of that table, 1,866 AM peak hour internal trips and 2,400 PM peak hour internal trips are projected in this scenario. Table 3.9-16 describes the internal “trip matching” assumptions used in the Build out “Without the Forest Ranch Concept Plan” analysis.

As shown in Table 3.9-18, the internal trip factors used in the Build out analysis vary slightly from those used in the Year 2030 analysis. Specifically, in the industrial land use category, the internal trip matching percentage was assumed to be somewhat lower in the Build out analysis than in the Year 2030 analysis (i.e., 40 percent rather than 60 percent). This reflects the expectation that the amount of growth expected in this land use category is sufficient that many of the peak-hour trips will be drawn from areas outside of the Foresthill community. In effect, the residential population in Foresthill would be inadequate to supply the number of employees needed to support the increased demand in the industrial workforce. Consequently, a greater proportion of the industrial employees will come from outside the community, thereby increasing the volume of external trips.

External Trips

The lower portion of Table 3.9-17 presents the external trips for the Build out “Without Forest Ranch” scenario. It shows 2,174 AM peak hour and 2,116 PM peak hour external trips.

**Table 3.9-17 Trip Generation Estimate -
Buildout “Without Forest Ranch” Scenario**

Land Use	Size	Unit	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Total Trips								
Single-Family Residential	4,855	DU ¹	485	1,748	2,233	1,602	777	2,379
Multi-Family Residential	314	DU	16	69	85	69	35	104
Retail	350,000	SF ²	130	81	211	333	427	760
	<i>- 20% Pass-by</i>		26	16	42	67	85	152
	<i>Net Retail Trips</i>		104	65	169	266	342	608
Office	180,954	SF	197	27	224	36	179	215
Industrial	1,638,443	SF	901	197	1,098	229	901	1,130
High School	565	Students	158	73	231	40	40	80
Gross Total			1,861	2,179	4,040	2,242	2,274	4,516
Internal Trips								
Single-Family Residential	4,855	DU	212	687	899	777	373	1150
Multi-Family Residential	314	DU	7	27	34	33	17	50
Retail	350,000	SF	94	58	152	240	307	547
Office	180,954	SF	118	16	134	22	107	129
Industrial	1,638,443	SF	360	79	439	92	360	452
High School	565	Students	142	66	208	36	36	72
Total Internal Trips			933	933	1,866	1,200	1,200	2,400
Net External Trips								
Single-Family Residential	4,855	DU	273	1,061	1,334	825	404	1,229
Multi-Family Residential	314	DU	9	42	51	36	18	54
Retail	350,000	SF	10	7	17	26	35	61
Office	180,954	SF	79	11	90	14	72	86
Industrial	1,638,443	SF	541	118	659	137	541	678
High School	565	Students	16	7	23	4	4	8
Total External Trips			928	1,246	2,174	1,042	1,074	2,116
Notes:								
¹ Dwelling unit								
² Square feet								