

4.10.1.1 Recreational Need

Cobb Estate Trail is socially feasible in that it provides a high-quality multiuse trail and partially offsets the existing unmet need for trails in the County of Los Angeles. Cobb Estate Trail would provide 11,155 feet of trail in the County's District 5 RPA 3 (Figure 4.1.4.1-1). Based on the year 2000 population for the District's Park Planning Areas No. 40 (Altadena) and No. 41 (Pasadena Foothills), the projected need for hiking trails was 894,701 feet. As of the completion of the County of Los Angeles SAMP in January 2004, only 97,943 feet had been provided, resulting in a deficiency of 796,759 feet of hiking trails.

The on-site vegetation consists of chaparral, with continuing patches of southern oak woodland. This potential trail segment would provide an east-west link from the Skylane Gap area to the Rubio Canyon Gap area.

4.11 FEASIBILITY OF RUBIO CANYON GAP OPTION NO. 1

4.11.1 Engineering Feasibility

This potential trail segment was determined from an engineering perspective to be feasible with constraints due to the fact that the majority of the slopes are predominantly steep. This potential trail segment may prove to be very difficult to construct, and the safety of recreational users should be carefully considered. If this trail segment is constructed, it is recommended that further engineering and geological studies be conducted prior to construction or that a professional geologist, engineer, and trail expert be present during construction. Another constraint was identified due to the trail's need to cross a blue-line stream. It is anticipated that prefabricated bridges would be used to avoid areas subject to the jurisdiction of USACOE and CDFG.

4.11.1.1 Geology and Soils

Alluvial units (Qg and Qog), granitic rocks (gr), and fault zone material are the four geologic units along Rubio Canyon Gap Option No. 1, with gr occurring all along the segment, fault materials along three areas, Qog along two areas, and Qg along only one area (Figure 4.1.1.1-1) (Appendix C). Slopes range from shallow, less than 27 degrees, to steep, between 35 and 53 degrees, with a predominance of steep slopes and a mix of shallow to moderate slopes (Figure 4.1.1.1-2 and Figure 4.1.1.1-3). Most areas of the trail have greater than 88 percent of slopes susceptible to earthquake-induced landslides, and two areas of the trail have 11 and 31 percent. This potential trail segment crosses four earthquake-prone canyons.

4.11.2 Environmental Feasibility

Rubio Canyon Gap Option No. 1 was found to be environmentally feasible but constrained due to USFS and private land ownership, but have no constraints with regard to aesthetics, biological resources, cultural resources, and hazards and hazardous materials.

4.11.2.1 Aesthetics

Rubio Canyon Gap Option No. 1 is expected to be 93 percent visible from the surrounding areas (Figure 4.1.2.1-1).

4.11.2.2 Biological and Hydrological Resources

This potential trail segment is located within five plant communities (Riversidean coastal sage scrub, chamise chaparral, coast live oak woodland, southern sycamore–alder riparian woodland, and nonnative grassland/developed) and could potentially affect 3 listed species (two plants and one fish) and 22 sensitive species (seven plants, seven herpetofauna, seven birds, and one mammal) with moderate to high potential to occur on the trail project footprint based on the vegetation along the trail segment (Figure 4.1.2.2-1) (Appendix A). None of these species was encountered as a result of biological surveys. Should any of these species be determined to be present as a result of subsequent directed surveys, the potential trail segment would be modified to avoid impacts to occupied habitat. There are numerous oak trees in the vicinity of this trail segment that are afforded protection pursuant to the County's Oak Tree Ordinance. Oak trees would provide a visual amenity and shade for trail users. Thus, as with the sensitive species, the trail segment would be modified to avoid grading within the canopy of mature oak trees. In addition, this trail would cross a blue-line stream once, requiring of the use of a bridge or other modifications to the alignment to avoid impacts to areas subject to the regulatory authority of the USACOE and CDFG.

4.11.2.3 Cultural Resources

This potential trail would not require excavation into underlying bedrock material that has a moderate or high potential to yield unique paleontological resources (Appendix B). There were no historical or archaeological resources identified as occurring within or adjacent to this potential trail segment based on a review of records available at the Archaeological Information Center (Figure 4.1.2.3-1). This potential trail segment would not affect any documented cemetery or known Native American burial site or any other sacred site recorded on the USGS topographic maps, or documented at the Archaeological Information Center, or with the Native American Heritage Commission.

4.11.2.4 Hazards and Hazardous Materials

One aboveground water pipeline was located along Rubio Canyon Gap was observed as a result of the Phase I Environmental Site Assessment (Appendix D). The length of the pipeline is unknown. However, no observations were made that would indicate Rubio Canyon Gap Option No. 1 would cause people or property to be exposed to hazards or hazardous materials (Figure 4.1.2.4-1).

4.11.2.5 Land Use and Land Ownership

Rubio Canyon Gap Option No. 1 Trail is consistent with all current land use documents and authorities, which are the County of Los Angeles General Plan²³ and Altadena Community Plan.²⁴ No dedicated trail easements exist for this segment. The land traversed by this trail is owned by various private owners and USFS (Figure 4.1.2.5-1). The length of the trail is approximately 8,235 feet. The closest portion of the trail to a residence is approximately 92 feet. Rubio Canyon Gap Option No. 1 is located entirely in the unincorporated Altadena Community. The segment joins Cobb Estate Trail to the west with the Loma Alta Trail. The trail segment traverses two land use

²³ County of Los Angeles Department of Regional Planning. 2005. *County of Los Angeles General Plan*. Los Angeles, CA.

²⁴ County of Los Angeles Department of Regional Planning. 1986. *Los Angeles County Altadena Community Plan*. Prepared by: Envicom Corp., Agoura Hills, CA; Greer & Company, Santa Ana, CA; Economics Research Associates, Los Angeles, CA; and Opinion Research of California, CA.

designations: Non-Urban (N), which allows up to one housing unit per 1 gross acre, and National Forest and National Forest Land Management (NF). None of the aforementioned land use designations deny the use of trails or trail easements. The Altadena Community Plan recognizes two existing trails in the San Gabriel Foothills and support further trail connections in the foothills.²⁵

4.11.3 Economic Feasibility

Rubio Canyon Gap Option No. 1 was found to be economically feasible but constrained due to its higher cost relative to the baseline.

4.11.3.1 Cost

The rough grading cost of Rubio Canyon Gap Option No. 1 is \$8.50 per linear foot. This estimate is 42 percent greater than the baseline cost of \$6.00 per linear foot for rough grading (Table 4.11.3.1-1, *Estimated Costs for Rubio Canyon Gap Option No. 1*). The total estimated cost, including design, bridges, signage, and restoration, is \$135,735.00. For the purpose of evaluating the use of only a portion of Rubio Canyon Gap Option No. 1 in combination with Rubio Canyon Gap Option No. 3, Rubio Canyon Gap Option No. 1 was divided into the east and west segments. The 5,689-foot east segment is east of the Rubio Canyon access point and leads to Loma Alta Trail. The total estimated cost, including design, bridges, signage, and restoration, for the east segment is \$90,798.00. The 2,546-foot west segment is west of the Rubio Canyon access point and connects to Cobb Estate Trail. The total estimated cost, including design, bridges, signage, and restoration, for the west segment is \$44,937.00.

**TABLE 4.11.3.1-1
ESTIMATED COSTS FOR RUBIO CANYON GAP OPTION NO. 1**

	Construction	Maintenance	Signage	Restoration/ Vegetation Buffer	Parking	Total*
Rubio Canyon Gap Option No. 1	\$82,412.00	\$7,799.00	\$30,400.00	\$15,125.00	N/A	\$135,735.00
East Segment	\$56,511.00	\$5,388.00	\$18,450.00	\$10,449.00	N/A	\$90,798.00
West Segment	\$25,901.00	\$2,411.00	\$11,950.00	\$4,676.00	N/A	\$44,937.00

NOTE: Construction cost = cost per linear feet x trail length + drainage structures + stream crossings + on-site design

4.11.4 Social Feasibility

Rubio Canyon Gap Option No. 1 was found to be socially feasible based on the ability of the 8,235-foot multiuse trail to partially offset the existing unmet recreational needs in the park planning area.

²⁵ County of Los Angeles Department of Regional Planning. 1986. *Los Angeles County Altadena Community Plan*. "Circulation and Parking Element," p. 5-2. Prepared by: Envicom Corp., Agoura Hills, CA; Greer & Company, Santa Ana, CA; Economics Research Associates, Los Angeles, CA; and Opinion Research of California, CA.

4.11.4.1 Recreational Need

Rubio Canyon Gap Option No. 1 is socially feasible in that it would provide a high-quality multiuse trail that would partially offset the existing unmet need for trails in the County of Los Angeles. Rubio Canyon Gap Option No. 1 would provide 8,235 feet of trail in the County's District 5 RPA 3 (Figure 4.1.4.1-1). Based on the year 2000 population for the District's Park Planning Areas No. 40 (Altadena) and No. 41 (Pasadena Foothills), the projected need for hiking trails was 894,701 feet. As of the completion of the County of Los Angeles SAMP in January 2004, only 97,943 feet had been provided, resulting in a deficiency of 796,759 feet of hiking trails.

The on-site vegetation consists of chaparral, with continuing patches of southern oak woodland. This potential trail segment would provide a north-south link from Chaney Trail and Chaney Trail South to Loma Alta Trail.

4.12 FEASIBILITY OF RUBIO CANYON GAP OPTION NO. 2

4.12.1 Engineering Feasibility

This potential trail segment was determined from an engineering perspective to be feasible. The area is characterized by its shallow slopes and is pre-engineered for either flood control channel or standard street grading. Thus, this segment is adequate for trail use.

4.12.1.1 Geology and Soils

This potential trail segment occurs on standard streets and the bank of a graded flood control channel that is engineered to handle large amounts of flood waters. The trail segment would have no geologic impact, and there are no geologic considerations.

4.12.2 Environmental Feasibility

Rubio Canyon Gap Option No. 2 was found to be environmentally feasible and have no constraints with regard to aesthetics, biological resources, cultural resources, hazards and hazardous materials, and land use and land ownership.

4.12.2.1 Aesthetics

Rubio Canyon Gap Option No. 2 is expected to be 95 percent visible from the surrounding areas.

4.12.2.2 Biological and Hydrological Resources

This potential trail segment is located within four plant communities (Riversidean coastal sage scrub, chamise chaparral, nonnative grassland/developed, and southern sycamore-alder riparian woodland) (Appendix A). These plant communities provide suitable habitat for 3 listed species (two plants, and one fish) and 21 sensitive species (seven plants, seven herpetofauna, seven birds, and one mammal) with moderate to high potential to occur on the trail project footprint (Figure 4.1.2.2-1). None of these species was encountered as a result of biological surveys. Should any of these species be determined to be present as a result of subsequent directed surveys, the potential trail segment would be modified to avoid impacts to occupied habitat. This trail would cross a blue-line stream once, requiring of the use of a bridge or other modifications to the alignment to avoid impacts to areas subject to the regulatory authority of the USACOE and CDFG.

4.12.2.3 Cultural Resources

This potential trail would not require excavation into underlying bedrock material that has a moderate or high potential to yield unique paleontological resources (Appendix B). There were no historical or archaeological resources identified as occurring within or adjacent to this potential trail segment based on a review of records available at the Archaeological Information Center (Figure 4.1.2.3-1). This potential trail segment would not affect any documented cemetery or known Native American burial site or any other sacred site recorded on the USGS topographic maps, or documented at the Archaeological Information Center, or with the Native American Heritage Commission.

4.12.2.4 Hazards and Hazardous Materials

Two reservoirs in the Rubio Canyon Gap Option No. 2 area were observed as a result of the Phase I Environmental Site Assessment (Appendix D). One is situated south of Las Flores Canyon, adjacent to a debris basin. A second is situated south of Rubio Canyon, north of Rubio Canyon Road. However, no observations were made that would indicate Rubio Canyon Gap Option No. 2 would cause people or property to be exposed to hazards or hazardous materials (Figure 4.1.2.4-1).

4.12.2.5 Land Use and Land Ownership

Rubio Canyon Gap Option No. 2 is consistent with all current land use documents and authorities, which are the County of Los Angeles General Plan²⁶ and Altadena Community Plan.²⁷ The trail passes through land owned by various private owners (with an existing trail easement mapped), the Los Angeles County Flood Control District, and public streets (Figure 4.1.2.5-1). The length of the trail is approximately 7,065 feet. The closest portion of the trail to a residence is approximately 16 feet. Rubio Canyon Gap Option No. 2 is located entirely in the unincorporated Altadena Community. The segment traverses through Rubio Canyon Wash Debris Basin and joins Cobb Estate Trail to the northwest with Loma Alta Trail to the east. The segment traverses three land use designations: Non-Urban (N), which allows up to one housing unit per 1 gross acre; Low Density Residential (2), which allows for one to six housing units per 1 gross acre; and Flood Control Facilities (FC). None of the aforementioned land use designations deny the use of trails or trail easements, and the Los Angeles County Flood Control District has a functioning trail easement on much of the proposed trail segment. The Altadena Community Plan recognizes two existing trails in the San Gabriel Foothills and supports connecting trails in the foothills.²⁸

4.12.3 Economic Feasibility

Rubio Canyon Gap Option No. 2 was found to be economically feasible but constrained due to its higher cost relative to the baseline.

²⁶ County of Los Angeles Department of Regional Planning. 2005. *County of Los Angeles General Plan*. Los Angeles, CA.

²⁷ County of Los Angeles Department of Regional Planning. 1986. *Los Angeles County Altadena Community Plan*. Prepared by: Envicom Corp., Agoura Hills, CA; Greer & Company, Santa Ana, CA; Economics Research Associates, Los Angeles, CA; and Opinion Research of California, CA.

²⁸ County of Los Angeles Department of Regional Planning. 1986. *Los Angeles County Altadena Community Plan*. "Circulation and Parking Element," p. 5-2. Prepared by: Envicom Corp., Agoura Hills, CA; Greer & Company, Santa Ana, CA; Economics Research Associates, Los Angeles, CA; and Opinion Research of California, CA.

4.12.3.1 Cost

Due to conditions on portions of the trail, rough grading of Rubio Canyon Gap Option No. 2 would cost \$8.50 per linear foot. This estimate is 42 percent greater than the baseline cost of \$6.00 per linear foot for rough grading (Table 4.12.3.1-1, *Estimated Costs for Rubio Canyon Gap Option No. 2*). The cost includes construction of a multiuse trail along the roadway, improvements to the existing access channel, and improvements to the Zane Grey access point. The total estimated cost, including design, bridges, signage, and restoration, is \$200,547.00.

**TABLE 4.12.3.1-1
ESTIMATED COSTS FOR RUBIO CANYON GAP OPTION NO. 2**

	Construction	Maintenance	Signage	Restoration/ Vegetation Buffer	Parking	Total
Rubio Canyon Gap Option No. 2	\$141,481.00	\$6,690.00	\$39,401.00	\$12,975.00	N/A	\$200,547.00

NOTE: Construction cost = cost per linear feet x trail length + drainage structures + stream crossings + on-site design

4.12.4 Social Feasibility

Rubio Canyon Gap Option No. 2 segment was found to be socially feasible based on the ability of the 7,065-foot multiuse trail to partially offset the existing unmet recreational needs in the park planning area.

4.12.4.1 Recreational Need

Rubio Canyon Gap Option No. 2 is socially feasible in that it would provide a high-quality multiuse trail that would partially offset the existing unmet need for trails in the County of Los Angeles. Rubio Canyon Gap Option No. 2 would provide 7,065 feet of trail in the County's District 5 RPA 3 (Figure 4.1.4.1-1). Based on the year 2000 population for the District's Park Planning Areas No. 40 (Altadena) and No. 41 (Pasadena Foothills), the projected need for hiking trails was 894,701 feet. As of the completion of the County of Los Angeles SAMP in January 2004, only 97,943 feet had been provided, resulting in a deficiency of 796,759 feet of hiking trails.

The on-site vegetation consists of chaparral, with continuing patches of southern oak woodland.

4.13 FEASIBILITY OF RUBIO CANYON GAP OPTION NO. 3

4.13.1 Engineering Feasibility

This potential trail segment was determined from an engineering perspective to be feasible with constraints. The majority of the slopes are predominantly shallow. However, it is anticipated that the construction of the trail may be difficult due to some steep areas of the trail, possibly requiring heavy earth-moving tools and machines.

4.13.1.1 Geology and Soils

The underlain geologic units are granitic rock (gr) and fault materials, with gr underlying the entire trail and with fault material also occurring in several areas (Figure 4.1.1.1-1) (Appendix C). Slopes range from shallow, less than 27 degrees, to very steep, greater than 53 degrees, with a significant dominance of shallow slopes and a mix of moderate, steep and very steep slopes (Figure 4.1.1.1-2 and Figure 4.1.1.1-3). Two areas have no slopes susceptible to earthquake-induced landslides, and two sections have 71 and 35 percent of slopes susceptible to earthquake-induced landslides. There are four canyon crossings.

4.13.2 Environmental Feasibility

Rubio Canyon Gap Option No. 3 was found to be environmentally feasible regards to aesthetics, biological resources, cultural resources, hazards and hazardous materials, and recreation. However, land use is constrained due to land ownership by USFS and requires additional coordination and documentation.

4.13.2.1 Aesthetics

Rubio Canyon Gap Option No. 3 is expected to be 100 percent visible from the area surrounding the trail (Figure 4.1.2.1-1).

4.13.2.2 Biological and Hydrological Resources

This potential trail segment is located within three plant communities (Riversidean coastal sage scrub, chamise chaparral, and coast live oak woodland) (Appendix A). These plant communities provide suitable habitat for 2 listed plant species and 18 sensitive species (seven plants, five herpetofauna, five birds, and one mammal) with moderate to high potential to occur on the trail project footprint (Figure 4.1.2.2-1). None of these species was encountered as a result of biological surveys. Should any of these species be determined to be present as a result of subsequent directed surveys, the potential trail segment would be modified to avoid impacts to occupied habitat. There are numerous oak trees in the vicinity of this trail segment that are afforded protection pursuant to the County's Oak Tree Ordinance. Oak trees would provide a visual amenity and shade for trail users. Thus, as with the sensitive species, the trail segment would be modified to avoid grading within the canopy of mature oak trees. This trail does not cross a blue-line stream.

4.13.2.3 Cultural Resources

This potential trail would not require excavation into underlying bedrock material that has a moderate or high potential to yield unique paleontological resources (Appendix B). There were no historical or archaeological resources identified as occurring within or adjacent to this potential trail segment based on a review of records available at the Archaeological Information Center (Figure 4.1.2.3-1). This potential trail segment would not affect any documented cemetery or known Native American burial site or any other sacred site recorded on the USGS topographic maps, or documented at the Archaeological Information Center, or with the Native American Heritage Commission.

4.13.2.4 Hazards and Hazardous Materials

Two reservoirs in the Rubio Canyon Gap Option No. 3 area were observed as a result of the Phase I Environmental Site Assessment (Appendix D). One is situated south of Las Flores Canyon, adjacent to a debris basin. A second is situated south of Rubio Canyon, north of Rubio Canyon Road. No observations were made that would indicate Rubio Canyon Gap Option No. 3 would cause people or property to be exposed to hazards or hazardous materials (Figure 4.1.2.4-1).

4.13.2.5 Land Use and Land Ownership

Rubio Canyon Gap Option No. 3 is consistent with all current land use documents and authorities, which are the County of Los Angeles General Plan²⁹ and Altadena Community Plan.³⁰ No dedicated trail easements exist for this segment. The land to be traverse by this trail is owned by various private owners and USFS (Figure 4.1.2.5-1). The length of the trail is approximately 4,934 feet. The closest portion of the trail to a residence is approximately 522 feet. Rubio Canyon Gap Option No. 3 is located in the unincorporated Altadena Community. The segment joins Sam Merrill Trail to the northwest with Loma Alta Trail to the southeast. The trail segment traverses one land use designations: Non-Urban (N), which allows up to one housing unit per 1 gross acre. The aforementioned land use designation allows the use of trails or trail easements. The Altadena Community Plan recognizes two existing trails in the San Gabriel Foothills and supports further connections to trails in the foothills.³¹

4.13.3 Economic Feasibility

Rubio Canyon Gap Option No. 3 was found to be economically feasible but constrained due to its higher cost relative to the baseline.

4.13.3.1 Cost

The rough grading cost of Rubio Canyon Gap Option No. 3 is \$7.50 per linear foot. This estimate is 25 percent greater than the baseline cost of \$6.00 per linear foot for rough grading (Table 4.13.3.1-1, *Estimated Costs for Rubio Canyon Gap Option No. 3*). The total estimated cost, including design, bridges, signage, and restoration, is \$74,545.00.

²⁹ County of Los Angeles Department of Regional Planning. 2005. *County of Los Angeles General Plan*. Los Angeles, CA.

³⁰ County of Los Angeles Department of Regional Planning. 1986. *Los Angeles County Altadena Community Plan*. Prepared by: Envicom Corp., Agoura Hills, CA; Greer & Company, Santa Ana, CA; Economics Research Associates, Los Angeles, CA; and Opinion Research of California, CA.

³¹ County of Los Angeles Department of Regional Planning. 1986. *Los Angeles County Altadena Community Plan*. "Circulation and Parking Element," p. 5-2. Prepared by: Envicom Corp., Agoura Hills, CA; Greer & Company, Santa Ana, CA; Economics Research Associates, Los Angeles, CA; and Opinion Research of California, CA.

**TABLE 4.13.3.1-1
ESTIMATED COSTS FOR RUBIO CANYON GAP OPTION NO. 3**

	Construction	Maintenance	Signage	Restoration/ Vegetation Buffer	Parking	Total
Rubio Canyon Gap Option No. 3	\$43,360.00	\$4,673.00	\$17,450.00	\$9,062.00	N/A	\$74,545.00

NOTE: Construction cost = cost per linear feet x trail length + drainage structures + stream crossings + on-site design

4.13.4 Social Feasibility

Rubio Canyon Gap Option No. 3 was found to be socially feasible based on the ability of the 4,934-foot multiuse trail to partially offset the existing unmet recreational needs in the park planning area.

4.13.4.1 Recreational Need

Rubio Canyon Gap Option No. 3 Trail is socially feasible in that it would provide a high-quality multiuse trail that would partially offset the existing unmet need for trails in the County of Los Angeles. Rubio Canyon Gap Option No. 3 would provide 4,934 feet of trail in the County's District 5 RPA 3 (Figure 4.1.4.1-1). Based on the year 2000 population for the District's Park Planning Areas No. 40 (Altadena) and No. 41 (Pasadena Foothills), the projected need for hiking trails was 894,701 feet. As of the completion of the County of Los Angeles SAMP in January 2004, only 97,943 feet had been provided, resulting in a deficiency of 796,759 feet of hiking trails.

The on-site vegetation consists of chaparral, with continuing patches of southern oak woodland. This potential trail segment would provide an east-west link from Chaney Trail and Chaney Trail South to Loma Alta Trail.

4.14 FEASIBILITY OF LOMA ALTA TRAIL

4.14.1 Engineering Feasibility

This potential trail segment was determined from an engineering perspective to be feasible. The majority of the slopes are predominantly shallow. Slope stability is a concern in this area, and it is recommended that trails be constructed under the supervision of a geologist or an engineer.

4.14.1.1 Geology and Soils

Alluvial unit (Qog), granitic rocks (gr), and fault zone material are the three geologic units along the existing Loma Alta Trail, with gr along all sections, fault materials along most areas, and Qog occurring on only the first and last sections (Figure 4.1.1.1-1) (Appendix C). Slopes range from shallow, less than 27 degrees, to steep, between 35 and 53 degrees, with a predominance of steep slopes (Figure 4.1.1.1-2 and Figure 4.1.1.1-3). Eight sections have greater than 40 percent (42 to 96 percent) of slopes susceptible to earthquake-induced landslides, and two sections (3 and 5) have 29 and 38 percent. There are eight canyon crossings.

4.14.2 Environmental Feasibility

Loma Alta Trail is an existing segment, and it was found to be environmentally feasible and have no constraints with regard to aesthetics, biological resources, cultural resources, hazards and hazardous materials, and land use and land ownership.

4.14.2.1 Aesthetics

Loma Alta Trail is expected to be 90 percent visible from the surrounding areas.

4.14.2.2 Biological and Hydrological Resources

This potential trail segment is located within three plant communities (Riversidean coastal sage scrub, chamise chaparral, and nonnative grassland/developed) (Appendix A). These plant communities would affect 2 listed plant species and 16 sensitive species (seven plants, four herpetofauna, four birds, and one mammal) with moderate to high potential to occur on the trail project footprint based on the vegetation along the trail segment (Figure 4.1.2.2-1). None of these species was encountered as a result of biological surveys. Should any of these species be determined to be present as a result of subsequent directed surveys, the potential trail segment would be modified to avoid impacts to occupied habitat. This trail does not cross a blue-line stream.

4.14.2.3 Cultural Resources

This potential trail would not require excavation into underlying bedrock material that has a moderate or high potential to yield unique paleontological resources (Appendix B). There were no historical or archaeological resources identified as occurring within or adjacent to this potential trail segment based on a review of records available at the Archaeological Information Center (Figure 4.1.2.3-1). This potential trail segment would not affect any documented cemetery or known Native American burial site or any other sacred site recorded on the USGS topographic maps, or documented at the Archaeological Information Center, or with the Native American Heritage Commission.

4.14.2.4 Hazards and Hazardous Materials

One gauging station was observed near the easternmost portion of the segment, east of Loma Alta Gap and north of Eaton Wash as a result of the Phase I Environmental Site Assessment (Appendix D). One reservoir was observed to be located adjacent to the eastern portion of the Loma Alta Trail, north of Noyes Elementary School, along Pinecrest Drive. However, no observations were made that would indicate Loma Alta Trail would cause people or property to be exposed to hazards or hazardous materials (Figure 4.1.2.4-1).

4.14.2.5 Land Use and Land Ownership

Loma Alta Trail is consistent with all current land use documents and authorities, which are the County of Los Angeles General Plan³² and Altadena Community Plan.³³ The County of Los Angeles

³² County of Los Angeles Department of Regional Planning. 2005. *County of Los Angeles General Plan*. Los Angeles, CA.

holds trail easements throughout the length of the trail, and the trail passes over land owned by various private owners and USFS (Figure 4.1.2.5-1). The length of the trail is approximately 9,813 feet. The closest portion of the trail to a residence is approximately 33 feet. Loma Alta Trail is located entirely in the unincorporated Altadena Community. The segment would join Rubio Canyon Gap Option No. 1 or the Zane Grey access point on the northwest to Eaton Canyon Natural Area on the southeast. The trail segment traverses one land use designations: National Forests and National Forest Management Lands (NF). The aforementioned land use designation does not deny the use of trails or trail easements. The Altadena Community Plan recognizes two existing trails in the San Gabriel Foothills and is supportive of further trail connections in the foothills.³⁴

4.14.3 Economic Feasibility

Loma Alta Trail is an existing trail and does not requiring construction. Therefore, the trail is economically feasible.

4.14.3.1 Cost

Costs associated with Loma Alta Trail include maintenance, signage, and restoration (Table 4.14.3.1-1, *Estimated Costs for Loma Alta Trail*). The total estimated cost is \$46,465.00.

**TABLE 4.14.3.1-1
ESTIMATED COSTS FOR LOMA ALTA TRAIL**

	Construction	Maintenance	Signage	Restoration/ Vegetation Buffer	Parking	Total
Loma Alta Trail	N/A	\$9,293.00	\$14,950.00	\$18,022.00	N/A	\$46,465.00

NOTE: Construction cost = cost per linear feet x trail length + drainage structures + stream crossings + on-site design

4.14.3 Social Feasibility

Loma Alta Trail was found to be socially feasible based on the ability of the 9,813-foot multiuse trail to partially offset the existing unmet recreational needs in the park planning area

4.14.3.1 Recreational Need

Loma Alta Trail is socially feasible in that it does provide a high-quality multiuse trail that would partially offset the existing unmet need for trails in the County of Los Angeles. Loma Alta Trail would provide 9,813 feet of trail in the County's District 5 RPA 3 (Figure 4.1.4.1-1). Based on the year 2000 population for the District's Park Planning Areas No. 40 (Altadena) and No. 41 (Pasadena Foothills), the projected need for hiking trails was 894,701 feet. As of the completion of

³³ County of Los Angeles Department of Regional Planning. 1986. *Los Angeles County Altadena Community Plan*. Prepared by: Envicom Corp., Agoura Hills, CA; Greer & Company, Santa Ana, CA; Economics Research Associates, Los Angeles, CA; and Opinion Research of California, CA.

³⁴ County of Los Angeles Department of Regional Planning. 1986. *Los Angeles County Altadena Community Plan*. "Circulation and Parking Element," p. 5-2. Prepared by: Envicom Corp., Agoura Hills, CA; Greer & Company, Santa Ana, CA; Economics Research Associates, Los Angeles, CA; and Opinion Research of California, CA.

the County of Los Angeles SAMP in January 2004, only 97,943 feet had been provided, resulting in a deficiency of 796,759 feet of hiking trails. The on-site vegetation consists of chaparral, with continuing patches of southern oak woodland.

SECTION 5.0 CONCLUSION

The results of the feasibility analysis indicate that all of the trail segments evaluated are feasible in terms of environmental, engineering, economic, and social factors.

The three existing trail segments did not have any constraints: Chaney Trail and Chaney Trail South, Cobb Estate Trail, and Loma Alta Trail. All of the potential trail segments, except the La Vina West Alternative and La Vina North Alternative, have constraints that would require site-specific refinements, such as reductions in trail widths due to excessive side-slope, modifications to the segments to avoid potential habitat for sensitive species or mature oak trees, best management practices to reduce erosion in areas adjacent to blue-line streams, acquisition of land from private landowners for trail easements, or increased construction and maintenance costs due to the terrain of the segment.

This analysis considers four alternatives consisting of combinations of trail segments to evaluate if they would be consistent with the goals and objectives of the County of Los Angeles for the Altadena Crest Trail Improvements (proposed project).

5.1 ALTERNATIVE 1

Alternative 1 is the recommended alternative, and it is consistent with the La Vina Specific Plan and environmental documentation. Alternative 1 utilizes those segments with the least constraints, and the Rubio Canyon Gap options with the least total costs to obtain the goal of a continuous trail. The total cost of Alternative 1 would be \$764,495.00. This alternative would provide 12.4 miles (65,494 feet) of multiuse trails for the Altadena Community. Alternative 1 would consist of the following 11 segments:

- Millard Canyon Gap Trail leading from Hahamongna Watershed Park, through Millard Canyon, and up to Canyon Crest Road
- La Vina West Alternative, with parking and trail access, between Canyon Crest and La Vina EIR Trail West within the designated open space
- La Vina EIR Trail West as a hiking trail, without the portion through the developed area of the La Vina development
- La Vina North Alternative to link La Vina EIR Trail East and La Vina EIR Trail West to existing public trails in the Angeles National Forest
- La Vina EIR Trail East as a multiuse trail for north-south access into Millard Canyon
- Chaney Trail and Chaney Trail South leading east from Loma Vista Park to Skylane Gap
- Skylane Gap Option No. 1 to connect to Cobb Estate Trail
- Cobb Estate Trail to connect up with the Rubio Canyon Gap area

- Rubio Canyon Gap Option No. 3 to reduce impacts to neighboring houses and reduce cost by avoiding construction along roadways, as would occur with Rubio Canyon Gap Option No. 2
- Rubio Canyon Gap Option No. 1, only the portion to the east of the Rubio Canyon access point, to continue through Rubio Canyon Gap and reduce costs by avoiding construction along roadways and improvements to the Zane Grey access point
- Loma Alta Trail to reach Eaton Canyon Natural Area

5.2 ALTERNATIVE 2

Alternative 2 is feasible and utilizes those trail segments that had the least environmental constraints. The total cost of Alternative 2 would be \$806,357.00. This alternative would provide 13 miles (68,863 feet) of multiuse trails for the Altadena Community. Alternative 2 would consist of the following 11 segments:

- Millard Canyon Gap Trail leading from Hahamongna Watershed Park, through Millard Canyon, and up to Canyon Crest Road
- La Vina West Alternative, with parking and trail access, between Canyon Crest and La Vina EIR Trail West within the designated open space
- La Vina EIR Trail West as a hiking trail, without the portion through the developed area of the La Vina development
- La Vina North Alternative to link La Vina EIR Trail East and La Vina EIR Trail West to existing public trails in the Angeles National Forest
- La Vina EIR Trail East as a multiuse trail for north-south access into Millard Canyon
- Chaney Trail and Chaney Trail South leading east from Loma Vista Park to Skylane Gap
- Skylane Gap Option No. 3, which provides a trail with reduced environmental and engineering impacts and utilizes a secluded trail segment
- Cobb Estate Trail to connect with the Rubio Canyon Gap area
- Rubio Canyon Gap Option No. 3 to reduce impacts to neighboring houses and reduce cost by avoiding construction along roadways, as would occur with Rubio Canyon Gap Option No. 2
- Rubio Canyon Gap Option No. 1, only the portion to the east of the Rubio Canyon access point, to continue through Rubio Canyon Gap and reduce costs by avoiding construction along roadways and improvements to the Zane Grey access point
- Loma Alta Trail to reach Eaton Canyon Natural Area

5.3 ALTERNATIVE 3

Alternative 3 was established to focus on the social benefit of the trails and meet the County's goal for the proposed project. This alternative is feasible, but constrained, because Skylane Gap Option No. 2 requires significantly more money to construct than other Skylane Gap options. The total cost of Alternative 3 would be \$884,740.00. This alternative would provide 14 miles (74,454 feet) of multiuse trails for the Altadena Community. Alternative 3 would consist of the following 11 segments:

- Millard Canyon Gap leading from Hahamongna Watershed Park, through Millard Canyon, and up to Canyon Crest Road
- La Vina West Alternative, with parking and trail access, between Canyon Crest and La Vina EIR Trail West within the designated open space
- La Vina EIR Trail West as a hiking trail, without the portion through the developed area of the La Vina development
- La Vina North Alternative to link La Vina EIR Trail East and La Vina EIR Trail West to existing public trails in the Angeles National Forest
- La Vina EIR Trail East as a multiuse trail for north-south access into Millard Canyon
- Chaney Trail and Chaney Trail South leading east from Loma Vista Park to Skylane Gap
- Skylane Gap Option No. 2, which provides vast scenic vistas and reduces the number of landowners required for coordination by going through U.S. Forest Service (USFS) land
- Cobb Estate Trail to connect with the Rubio Canyon Gap area
- Rubio Canyon Gap Option No. 3 to reduce impacts to neighboring houses and reduce cost by avoiding construction along roadways, as would occur with Rubio Canyon Gap Option No. 2
- Rubio Canyon Gap Option No. 1, only the portion to the east of the Rubio Canyon access point, to continue through Rubio Canyon Gap and reduce costs by avoiding construction along roadways and improvements to the Zane Grey access point
- Loma Alta Trail to reach the Eaton Canyon Natural Area

5.4 ALTERNATIVE 4

Alternative 4 is the No Project Alternative. It relies on the area's existing trail system. This would consist of Chaney Trail and Chaney Trail South, Sunset Ridge Trail, Cobb Estate Trail, and Loma Alta Trail. This alternative is not consistent with the County's goal and objectives for the proposed project of providing a continuous trail from Hahamongna Watershed Park to Eaton Canyon Natural Area.

5.5 RECOMMENDATIONS

The trail segments to be implemented must meet the County's goal of providing a continuous trail from Hahamongna Watershed Park to Eaton Canyon Natural Area. Alternative 1 is recommended because it is the only alternative that will meet the specified goals and objectives of the proposed project with the least number of constraints.

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