



William S. Hart Union High School District

**NOTICE OF AVAILABILITY
OF A DRAFT ENVIRONMENTAL IMPACT REPORT**

To: Agencies, Organizations, and Interested Parties

Subject: Notice of Availability of a Draft Environmental Impact Report (SCH No. 2004031110) in Compliance with the State of California Public Resources Code Section 21092 and California Environmental Quality Act (CEQA) Guidelines Section 15087.

The William S. Hart Union High School District (District) is the Lead Agency under CEQA and has prepared a Draft Environmental Impact Report (EIR) for Castaic High School (proposed project). The EIR describes and evaluates the environmental effects the proposed project and its alternatives. The District has prepared this Notice of Availability (NOA) for the EIR in order to provide opportunity for comment on the Draft EIR.

Project Title: Castaic High School

Agencies: The District requests your agency's comments on environmental information in the Draft EIR relevant to your statutory responsibilities in connection with the proposed project, in accordance with Section 15086 of the CEQA Guidelines. Your agency will need to use the EIR when considering any permit or other approval that your agency must issue for the Project.

Organizations and Interested Parties: The District requests your comments and concerns regarding the environmental issues associated with construction and operation of the proposed project.

Project Location: The project would be developed on a 71.4-acre school site within a 198-acre project site (Tract 47807) in the community of Castaic in unincorporated Los Angeles County. The eastern site boundary is approximately two miles west of the intersection of Parker Road and Sloan Canyon Road; and the southern site boundary is approximately two miles north of the intersection of Hasley Canyon Road and Romero Canyon Road.

Project Description: The project would develop a comprehensive high school for 2,600 students on a 71.4-acre site within a 198-acre property. The school would include about 250,000 square feet of building area comprising several classroom buildings; an administration building; a library; a performing arts building with up to an 800-seat capacity; a multipurpose room and kitchen; a physical education building including two gymnasiums and administrative offices; a 5,000-seat football/soccer stadium with a running track; and tennis courts, basketball courts, baseball and softball fields, and other play fields. The project would include on- and offsite road and utility improvements. The school would operate on a traditional, single-track, two-semester calendar.

Environmental Issues Addressed in the EIR: Based on the analysis in the EIR and comment letters received in response to the three separate Notices of Preparation (NOP), the District determined that the following environmental issues would be further analyzed in the EIR:

☒ Aesthetics	☒ Air Quality	☒ Biological Resources
☒ Cultural Resources	☒ Geology & Soils	☒ Greenhouse Gas Emissions
☒ Hazards & Hazardous Materials	☒ Hydrology & Water Quality	☒ Land Use & Planning
☒ Noise	☒ Population & Housing	☒ Public Services
☒ Recreation	☒ Transportation & Traffic	☒ Utilities / Service Systems

The EIR addresses the short- and long-term effects of proposed project on the environment. Mitigation measures are required for impacts that were determined to be significant. Significant and unavoidable impacts were identified for: Aesthetics, Air Quality, Noise, and Transportation and Traffic.

Document Availability: The EIR is available for review at <http://www.hart.k12.ca.us/index.php/schools/castaic-high-school> and at the following locations:

- William S. Hart Union High School District, 21515 Centre Pointe Parkway, Santa Clarita, CA 91350
 - Monday through Friday 8:00 AM–5:30 PM
- Valencia Public Library, 23743 W. Valencia Blvd., Valencia, CA 91355
 - Monday through Thursday 10:00 AM–9:00 PM
 - Friday 10:00 PM–6:00 PM
 - Saturday 10:00 AM–5:00 PM
 - Sunday 1:00 PM–5:00 PM
- Castaic Public Library, 27971 Sloan Canyon Road, Castaic, CA 91384
 - Monday and Tuesday 10:00 AM–8:00 PM
 - Wednesday and Thursday 12:00 PM–6:00 PM
 - Friday 12:00 PM–5:00 PM
 - Saturday 10:00 AM–5:00 PM
 - Sunday closed
- Stevenson Ranch Express Library, 26233 West Faulkner Drive, Stevenson Ranch, CA 91381
 - Monday closed
 - Tuesday 3:00 PM–7:00 PM
 - Wednesday and Thursday 1:00 PM–5:00 PM
 - Friday and Saturday 10:00 AM–12:00 PM; 1:00 PM–4:00 PM
 - Sunday closed
- Sloan Canyon Christian Academy, 28355 Sloan Canyon Road, Castaic, CA 91384
 - Monday through Friday 8:00 AM–5:30 PM

Public Comment Period: Pursuant to California Code of Regulations, Title 14, Section 15105(a), the District is soliciting public comments regarding the Castaic High School Draft EIR. Written comments will be accepted between **July 24, 2012 and September 6, 2012.**

Written Comments: Please indicate a contact person for your agency or organization and send your comments to William S. Hart Union High School District, 21515 Centre Pointe Parkway, Santa Clarita, CA 91350. ATTN: Tom Cole. Comments can also be sent by e-mail to tcole@hartdistrict.org; include “Castaic High School” in the subject line. For more information, contact Tom Cole at (661) 259-0033 x252.

Public Hearing: The District will hold a Draft EIR public hearing on **August 15, 2012** at 5:00 PM as part of the regular school board meeting, at the District boardroom, 21515 Centre Point Parkway, Santa Clarita. Agencies, organizations, and interested parties are welcome to attend and comment on the Draft EIR.

DRAFT

**CASTAIC HIGH
SCHOOL
ENVIRONMENTAL
IMPACT REPORT**

SCH No. 2004031110



prepared for:

**WILLIAM S. HART
UNION HIGH SCHOOL
DISTRICT**

*Contact:
Thomas B. Cole
Chief Operations Officer*

prepared by:

**THE PLANNING
CENTER**

*Contact:
Dwayne Mears, AICP
Principal, School
Facilities Planning*

JULY 2012

DRAFT

CASTAIC HIGH

SCHOOL

ENVIRONMENTAL

IMPACT REPORT

SCH NO. 2004031110



prepared for:

**WILLIAM S. HART
UNION HIGH SCHOOL
DISTRICT**

21515 Centre Point Parkway
Santa Clarita, CA 91350
Tel: 661.259.0033 x252

Contact:
Thomas B. Cole
Chief Operations Officer

prepared by:

**THE PLANNING
CENTER**

1580 Metro Drive
Costa Mesa, CA 92626
Tel: 714.966.9220 • Fax: 714.966.9221
E-mail: information@planningcenter.com
Website: www.planningcenter.com

Contact:
Dwayne Mears, AICP
Principal, School
Facilities Planning

WSH-02.0E

JULY 2012

Table of Contents

Section	Page
1. EXECUTIVE SUMMARY	1-1
1.1 INTRODUCTION	1-1
1.2 ENVIRONMENTAL PROCEDURES.....	1-1
1.2.1 EIR Format	1-2
1.2.2 Type and Purpose of This Draft EIR	1-4
1.3 PROJECT LOCATION	1-4
1.4 PROJECT DESCRIPTION	1-4
1.4.1 School Facilities	1-4
1.4.2 Other Facilities	1-4
1.4.3 School Programs	1-5
1.4.4 Roadway Infrastructure.....	1-6
1.4.5 Parking	1-8
1.4.6 Utilities.....	1-8
1.5 SUMMARY OF PROJECT ALTERNATIVES.....	1-12
1.5.1 Alternative 1 – No Project/No Development Plan Alternative	1-12
1.5.2 Alternative 2 – No Project/Previously Approved Development.....	1-12
1.5.3 Alternative 3 – Reduced Intensity Alternative.....	1-13
1.5.4 Alternative 4 – Romero Canyon Alternative Site	1-13
1.5.5 Alternative 5 – Hasley-Sloan Alternative Site	1-14
1.5.6 Alternative 6 – Sterling Gateway Alternate Site.....	1-14
1.6 ISSUES TO BE RESOLVED	1-14
1.7 AREAS OF CONTROVERSY	1-15
1.8 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION.....	1-15
2. INTRODUCTION.....	2-1
2.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT	2-1
2.2 NOTICE OF PREPARATION AND INITIAL STUDY	2-1
2.3 SCOPE OF THIS DRAFT EIR	2-2
2.3.1 Impacts Considered Less Than Significant	2-2
2.3.2 Potentially Significant Adverse Impacts.....	2-2
2.3.3 Unavoidable Significant Adverse Impacts	2-3
2.4 INCORPORATION.....	2-3
2.5 FINAL EIR CERTIFICATION	2-4
2.6 MITIGATION MONITORING	2-4
3. ENVIRONMENTAL SETTING	3-1
3.1 INTRODUCTION	3-1
3.2 PROJECT LOCATION AND CHARACTERISTICS.....	3-1
3.2.1 Project Location	3-1
3.2.2 Regional Environmental Setting	3-1
3.2.3 Site Environmental Setting.....	3-2
3.2.4 General Plan and Zoning	3-4
4. PROJECT DESCRIPTION	4-1
4.1 INTRODUCTION	4-1



Table of Contents

Section	Page
4.2	PROJECT OVERVIEW AND BACKGROUND..... 4-1
4.3	PROJECT NEED 4-2
4.4	STATEMENT OF OBJECTIVES..... 4-2
4.5	PROJECT CHARACTERISTICS 4-2
4.5.1	School Facilities 4-2
4.5.2	School Programs 4-3
4.5.3	Roadway Infrastructure..... 4-4
4.5.4	Parking 4-6
4.5.5	Utilities..... 4-6
4.6	CONSTRUCTION PHASE 4-10
4.7	INTENDED USES OF THE EIR 4-14
5.	ENVIRONMENTAL ANALYSIS..... 5.1-1
5.1	AESTHETICS 5.1-1
5.1.1	Environmental Setting..... 5.1-1
5.1.2	Thresholds of Significance 5.1-9
5.1.3	Environmental Impacts 5.1-9
5.1.4	Cumulative Impacts 5.1-14
5.1.5	Existing Regulations and Standard Conditions..... 5.1-15
5.1.6	Level of Significance Before Mitigation..... 5.1-15
5.1.7	Mitigation Measures..... 5.1-16
5.1.8	Level of Significance After Mitigation..... 5.1-17
5.2	AIR QUALITY 5.2-1
5.2.1	Environmental Setting..... 5.2-1
5.2.2	Thresholds of Significance 5.2-10
5.2.3	Environmental Impacts 5.2-12
5.2.4	Cumulative Impacts 5.2-19
5.2.5	Existing Regulations and Standard Conditions..... 5.2-19
5.2.6	Level of Significance Before Mitigation..... 5.2-20
5.2.7	Mitigation Measures..... 5.2-20
5.2.8	Level of Significance After Mitigation..... 5.2-22
5.3	BIOLOGICAL RESOURCES..... 5.3-1
5.3.1	Environmental Setting..... 5.3-1
5.3.2	Thresholds of Significance 5.3-15
5.3.3	Environmental Impacts 5.3-16
5.3.4	Cumulative Impacts 5.3-19
5.3.5	Existing Regulations and Standard Conditions..... 5.3-19
5.3.6	Level of Significance Before Mitigation..... 5.3-19
5.3.7	Mitigation Measures..... 5.3-20
5.3.8	Level of Significance After Mitigation..... 5.3-24
5.4	CULTURAL RESOURCES..... 5.4-1
5.4.1	Environmental Setting..... 5.4-1
5.4.2	Thresholds of Significance 5.4-6
5.4.3	Environmental Impacts 5.4-6
5.4.4	Cumulative Impacts 5.4-8
5.4.5	Existing Regulations and Standard Conditions..... 5.4-8
5.4.6	Level of Significance Before Mitigation..... 5.4-9

Table of Contents

Section	Page
5.4.7	Mitigation Measures..... 5.4-9
5.4.8	Level of Significance After Mitigation..... 5.4-12
5.5	GEOLOGY AND SOILS 5.5-1
5.5.1	Environmental Setting..... 5.5-1
5.5.2	Thresholds of Significance 5.5-7
5.5.3	Environmental Impacts 5.5-8
5.5.4	Cumulative Impacts 5.5-12
5.5.5	Existing Regulations and Standard Conditions..... 5.5-13
5.5.6	Level of Significance Before Mitigation..... 5.5-13
5.5.7	Mitigation Measures..... 5.5-13
5.5.8	Level of Significance After Mitigation..... 5.5-14
5.6	GREENHOUSE GAS EMISSIONS 5.6-1
5.6.1	Environmental Setting..... 5.6-1
5.6.2	Thresholds of Significance 5.6-9
5.6.3	Environmental Impacts 5.6-10
5.6.4	Cumulative Impacts 5.6-12
5.6.5	Existing Regulations and Standard Conditions..... 5.6-12
5.6.6	Level of Significance Before Mitigation..... 5.6-13
5.6.7	Mitigation Measures..... 5.6-13
5.6.8	Level of Significance After Mitigation..... 5.6-13
5.7	HAZARDS AND HAZARDOUS MATERIALS 5.7-1
5.7.1	Environmental Setting..... 5.7-1
5.7.2	Thresholds of Significance 5.7-3
5.7.3	Environmental Impacts 5.7-4
5.7.4	Cumulative Impacts 5.7-14
5.7.5	Existing Regulations and Standard Conditions..... 5.7-14
5.7.6	Level of Significance Before Mitigation..... 5.7-14
5.7.7	Mitigation Measures..... 5.7-14
5.7.8	Level of Significance after Mitigation 5.7-14
5.8	HYDROLOGY AND WATER QUALITY 5.8-1
5.8.1	Environmental Setting..... 5.8-1
5.8.2	Thresholds of Significance 5.8-8
5.8.3	Environmental Impacts 5.8-9
5.8.4	Cumulative Impacts 5.8-23
5.8.5	Existing Regulations and Standard Conditions..... 5.8-23
5.8.6	Level of Significance Before Mitigation..... 5.8-23
5.8.7	Mitigation Measures..... 5.8-23
5.8.8	Level of Significance After Mitigation..... 5.8-24
5.9	LAND USE AND PLANNING 5.9-1
5.9.1	Environmental Setting..... 5.9-1
5.9.2	Thresholds of Significance 5.9-2
5.9.3	Environmental Impacts 5.9-3
5.9.4	Cumulative Impacts 5.9-4
5.9.5	Existing Regulations and Standard Conditions..... 5.9-4
5.9.6	Level of Significance Before Mitigation..... 5.9-4
5.9.7	Mitigation Measures..... 5.9-4
5.9.8	Level of Significance After Mitigation..... 5.9-4



Table of Contents

Section	Page
5.10 NOISE	5.10-1
5.10.1 Environmental Setting.....	5.10-1
5.10.2 Thresholds of Significance	5.10-12
5.10.3 Environmental Impacts	5.10-14
5.10.4 Existing Regulations and Standard Conditions.....	5.10-39
5.10.5 Level of Significance Before Mitigation.....	5.10-39
5.10.6 Mitigation Measures.....	5.10-40
5.10.7 Level of Significance After Mitigation	5.10-41
5.11 POPULATION AND HOUSING.....	5.11-1
5.11.1 Environmental Setting.....	5.11-1
5.11.2 Thresholds of Significance	5.11-4
5.11.3 Environmental Impacts	5.11-4
5.11.4 Cumulative Impacts	5.11-5
5.11.5 Level of Significance Before Mitigation.....	5.11-6
5.11.6 Mitigation Measures.....	5.11-6
5.11.7 Level of Significance After Mitigation	5.11-6
5.12 PUBLIC SERVICES	5.12-1
5.12.1 Fire Protection and Emergency Services	5.12-1
5.12.2 Police Protection	5.12-3
5.12.3 School Services	5.12-4
5.12.4 Other Public Facilities	5.12-6
5.12.5 Cumulative Impacts	5.12-7
5.13 RECREATION.....	5.13-1
5.13.1 Environmental Setting.....	5.13-1
5.13.2 Thresholds of Significance	5.13-3
5.13.3 Environmental Impacts	5.13-3
5.13.4 Cumulative Impacts	5.13-4
5.13.5 Existing Regulations and Standard Conditions.....	5.13-4
5.13.6 Level of Significance Before Mitigation.....	5.13-4
5.13.7 Mitigation Measures.....	5.13-4
5.13.8 Level of Significance After Mitigation	5.13-4
5.14 TRANSPORTATION AND TRAFFIC	5.14-1
5.14.1 Environmental Setting.....	5.14-2
5.14.2 Thresholds of Significance	5.14-5
5.14.3 Environmental Impacts	5.14-6
5.14.4 Cumulative Impacts	5.14-34
5.14.5 Existing Regulations and Standard Conditions.....	5.14-34
5.14.6 Level of Significance Before Mitigation.....	5.14-35
5.14.7 Mitigation Measures.....	5.14-35
5.14.8 Level of Significance After Mitigation	5.14-36
5.15 UTILITIES AND SERVICE SYSTEMS	5.15-1
5.15.1 Water Services	5.15-1
5.15.2 Wastewater and Drainage Facilities.....	5.15-5
5.15.3 Solid Waste Services	5.15-12
5.15.4 Dry Utilities	5.15-16

Table of Contents

Section	Page
6. SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS	6-1
6.1 AESTHETICS	6-1
6.2 AIR QUALITY	6-2
6.3 NOISE	6-3
6.4 TRANSPORTATION AND TRAFFIC	6-3
7. ALTERNATIVES TO THE PROPOSED PROJECT	7-1
7.1 INTRODUCTION	7-1
7.1.1 Purpose and Scope	7-1
7.1.2 Project Objectives	7-3
7.1.3 Project-Related Significant and Unavoidable Impacts	7-3
7.2 ALTERNATIVES CONSIDERED AND REJECTED DURING THE SCOPING AND PROJECT PLANNING PROCESS	7-4
7.2.1 Alternative Development Areas	7-4
7.3 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS	7-5
7.4 ALTERNATIVE 1 – NO PROJECT/NO DEVELOPMENT PLAN ALTERNATIVE	7-5
7.4.1 Aesthetics.....	7-5
7.4.2 Air Quality.....	7-6
7.4.3 Biological Impacts.....	7-6
7.4.4 Cultural Resources.....	7-6
7.4.5 Geology and Soils	7-6
7.4.6 Greenhouse Gas Emissions	7-6
7.4.7 Hazards and Hazardous Materials.....	7-7
7.4.8 Hydrology and Water Quality.....	7-7
7.4.9 Land Use and Planning	7-7
7.4.10 Noise	7-7
7.4.11 Population and Housing	7-7
7.4.12 Public Services.....	7-8
7.4.13 Recreation.....	7-8
7.4.14 Transportation and Traffic.....	7-8
7.4.15 Utilities and Service Systems.....	7-8
7.4.16 Conclusion	7-8
7.5 ALTERNATIVE 2 – NO PROJECT/PREVIOUSLY APPROVED DEVELOPMENT	7-9
7.5.1 Aesthetics.....	7-10
7.5.2 Air Quality.....	7-10
7.5.3 Biological Impacts.....	7-10
7.5.4 Cultural Resources.....	7-11
7.5.5 Geology and Soils	7-11
7.5.6 Greenhouse Gas Emissions	7-11
7.5.7 Hazards and Hazardous Materials.....	7-12
7.5.8 Hydrology and Water Quality.....	7-12
7.5.9 Land Use and Relevant Planning	7-12
7.5.10 Noise	7-12
7.5.11 Population and Housing	7-13
7.5.12 Public Services.....	7-13
7.5.13 Recreation.....	7-13
7.5.14 Transportation and Traffic.....	7-13



Table of Contents

Section	Page
7.5.15	Utilities and Service Systems..... 7-14
7.5.16	Conclusion..... 7-14
7.6	ALTERNATIVE 3 – REDUCED INTENSITY ALTERNATIVE 7-14
7.6.1	Aesthetics..... 7-15
7.6.2	Air Quality..... 7-15
7.6.3	Biological Impacts..... 7-15
7.6.4	Cultural Resources..... 7-15
7.6.5	Geology and Soils 7-16
7.6.6	Greenhouse Gas Emissions 7-16
7.6.7	Hazards and Hazardous Materials..... 7-16
7.6.8	Hydrology and Water Quality..... 7-16
7.6.9	Land Use and Relevant Planning 7-17
7.6.10	Noise 7-17
7.6.11	Population and Housing 7-17
7.6.12	Public Services..... 7-17
7.6.13	Recreation..... 7-17
7.6.14	Transportation and Traffic..... 7-17
7.6.15	Utilities and Service Systems..... 7-18
7.6.16	Conclusion..... 7-19
7.7	ALTERNATIVE 4 – ROMERO CANYON ALTERNATIVE SITE 7-19
7.7.1	Aesthetics..... 7-20
7.7.2	Air Quality..... 7-20
7.7.3	Biological Resources 7-20
7.7.4	Cultural Resources..... 7-21
7.7.5	Geology and Soils 7-21
7.7.6	Greenhouse Gas Emissions 7-21
7.7.7	Hazards and Hazardous Materials..... 7-21
7.7.8	Hydrology and Water Quality..... 7-21
7.7.9	Land Use and Planning 7-22
7.7.10	Noise 7-22
7.7.11	Population and Housing 7-22
7.7.12	Public Services..... 7-22
7.7.13	Recreation..... 7-23
7.7.14	Transportation and Traffic..... 7-23
7.7.15	Utilities and Service Systems..... 7-23
7.7.16	Conclusion..... 7-23
7.8	ALTERNATIVE 5 – HASLEY-SLOAN ALTERNATIVE SITE 7-23
7.8.1	Aesthetics..... 7-24
7.8.2	Air Quality..... 7-24
7.8.3	Biological Resources 7-25
7.8.4	Cultural Resources..... 7-25
7.8.5	Geology and Soils 7-25
7.8.6	Greenhouse Gas Emissions 7-26
7.8.7	Hazards and Hazardous Materials..... 7-26
7.8.8	Hydrology and Water Quality..... 7-26
7.8.9	Land Use and Planning 7-26
7.8.10	Noise 7-27

Table of Contents

Section	Page
7.8.11	Population and Housing 7-27
7.8.12	Public Services..... 7-27
7.8.13	Recreation..... 7-27
7.8.14	Transportation and Traffic..... 7-28
7.8.15	Utilities and Service Systems..... 7-28
7.8.16	Conclusion..... 7-28
7.9	ALTERNATIVE 6 – STERLING GATEWAY ALTERNATE SITE..... 7-29
7.9.1	Aesthetics..... 7-30
7.9.2	Air Quality..... 7-30
7.9.3	Biological Resources 7-31
7.9.4	Cultural Resources..... 7-31
7.9.5	Geology and Soils 7-31
7.9.6	Greenhouse Gas Emissions 7-31
7.9.7	Hazards and Hazardous Materials..... 7-32
7.9.8	Hydrology and Water Quality..... 7-32
7.9.9	Land Use and Planning 7-32
7.9.10	Noise 7-32
7.9.11	Population and Housing 7-33
7.9.12	Public Services..... 7-33
7.9.13	Recreation..... 7-33
7.9.14	Transportation and Traffic..... 7-34
7.9.15	Utilities and Service Systems..... 7-34
7.9.16	Conclusion..... 7-34
7.10	ENVIRONMENTALLY SUPERIOR ALTERNATIVE..... 7-35
8.	IMPACTS FOUND NOT TO BE SIGNIFICANT..... 8-1
8.1	ASSESSMENT IN THE INITIAL STUDY 8-1
9.	SIGNIFICANT IRREVERSIBLE CHANGES DUE TO THE PROPOSED PROJECT..... 9-1
10.	GROWTH-INDUCING IMPACTS OF THE PROPOSED PROJECT 10-1
11.	ORGANIZATIONS AND PERSONS CONSULTED 11-1
12.	QUALIFICATIONS OF PERSONS PREPARING EIR 12-1
13.	BIBLIOGRAPHY 13-1



Table of Contents

Section	Page
APPENDICES (on CD attached to back cover)	
Appendix A	NOP and Comments
Appendix B	Public Services
Appendix C	Aesthetics
Appendix D	Air Quality and Greenhouse Gas Emissions
Appendix E	Biological Resources
	E-1 Biology Report_July 2012
	E-2 Mitigation Plan_July 2011
	E-3 Bio Report_July 2010
	E-4 Oak Tree Report_April 2010
	E-5 Oak Tree Report_June 1989
Appendix F	Geology and Soils
	F-1 Geohazards_Nov 2010
	F-2 Geohazards_May 2010
Appendix G	Hazards and Hazardous Materials
	G-1 Tank Assessment_July 2012
	G-2 Phase I_March 2012
	G-3 PEA_March 2011
	G-4 Phase I_Feb 2010
Appendix H	Hydrology and Water Quality
Appendix I	Noise
Appendix J	Transportation and Traffic
	J-1 Supplemental Traffic_May 2012
	J-2 Traffic Study_Jan 2012
	J-3 Traffic Study_Oct 2011
	J-4 Supplemental Traffic_Oct 2011
	J-5 Supplemental Traffic_June 2011

List of Figures

Figure		Page
Figure EX-1	Regional Location.....	1-45
Figure EX-2	Local Vicinity.....	1-47
Figure EX-3	Conceptual Site Plan.....	1-49
Figure 3-1	Regional Location.....	3-7
Figure 3-2	Project Area.....	3-9
Figure 3-3	Local Vacinity.....	3-11
Figure 3-4	Aerial Photograph.....	3-13
Figure 3-5	Site Photographs.....	3-15
Figure 3-6	Site Photographs.....	3-17
Figure 3-7	Site Photographs.....	3-19
Figure 3-8	Site Photographs.....	3-21
Figure 3-9	Site Photographs.....	3-23
Figure 3-10	Cumulative Projects Map.....	3-25
Figure 4-1	Conceptual Site Plan.....	4-17
Figure 4-2	School Access Roadways.....	4-19
Figure 4-3	Road Sections.....	4-21
Figure 4-4	Grading Plan: Northern Access Roads.....	4-23
Figure 4-5	Grading Plan: Southern Access Roads.....	4-25
Figure 4-6	Utility Plan.....	4-27
Figure 4-7	Area Drainage Plan.....	4-29
Figure 4-8	Campus Drainage Plan.....	4-31
Figure 4-9	New Sewer Plan.....	4-33
Figure 4-10	Upgraded Sewer Plan.....	4-35
Figure 4-11	Grading Plan.....	4-37
Figure 5.1-1	Significant Ridgelines.....	5.1-19
Figure 5.1-2	Residential Viewers.....	5.1-21
Figure 5.1-3a	Viewsheds.....	5.1-23
Figure 5.1-3b	Viewsheds.....	5.1-25
Figure 5.1-4	Conceptual Rendering.....	5.1-27
Figure 5.1-5a	Visual Simulation.....	5.1-29
Figure 5.1-5b	Visual Simulation.....	5.1-31
Figure 5.2-1	Receptors Exposed to Elevated PM ₁₀ Concentrations.....	5.2-25
Figure 5.3-1	Vegetation Communities, Project Site.....	5.3-25
Figure 5.3-2	Jurisdictional Delineation of Project Site.....	5.3-27
Figure 5.5-1	Geologic Map.....	5.5-15
Figure 5.5-2	Regional Fault Map.....	5.5-17
Figure 5.7-1	Historic Oil Well Location.....	5.7-15
Figure 5.7-2	Aboveground Water Storage Tank.....	5.7-17
Figure 5.7-3	Improvements for Containing Water Potentially Released from Water Tanks.....	5.7-19
Figure 5.8-1	Watershed and Groundwater Basin.....	5.8-25
Figure 5.8-2	Existing Site Drainage.....	5.8-27
Figure 5.8-3	Proposed Drainage Plan for Slopes Next to Northeast Campus Boundary.....	5.8-29
Figure 5.8-4	Concrete Arch Culvert.....	5.8-31
Figure 5.8-5	Proposed Drainage Improvements, Southeast Part of Project Site.....	5.8-33
Figure 5.8-6	Road Protection, Valley Creek Road near Southeast Site Boundary.....	5.8-35
Figure 5.8-7	Option 1, Drainage Improvements, Valley Creek Road at Baringer Road.....	5.8-37



List of Figures

Figure		Page
Figure 5.8-8	Option 2, Drainage Improvements, Valley Creek Road at Baringer Road	5.8-39
Figure 5.8-9	Drainage Options: Intersection of Baringer Road with Sloan Canyon Road.....	5.8-41
Figure 5.10-1	Noise Monitoring Locations.....	5.10-43
Figure 5.10-2	Noise Modeling Locations.....	5.10-45
Figure 5.10-3	Stadium Noise Level Contour Map	5.10-47
Figure 5.11-1	Census-Designated Places near the Project Site	5.11-7
Figure 5.13-1	Public Parks near the Project Site	5.13-5
Figure 5.13-2	Adopted County Trails.....	5.13-7
Figure 5.14-1	Intersection Location Map	5.14-43
Figure 5.14-2	Conceptual Roadway and Intersection Lane Layout, Northern Route - Option A	5.14-45
Figure 5.14-3	Conceptual Roadway and Intersection Lane Layout, Northern Route - Option B	5.14-47
Figure 5.14-4	Forecast Project Trip Distribution, Scenario 1	5.14-49
Figure 5.14-5	Forecast Project Trip Distribution, Scenario 2	5.14-51
Figure 7-1	Alternative Sites	7-39

List of Tables

Table		Page
Table 1-1	Stormwater Basins	1-9
Table 1-2	New Sewers.....	1-11
Table 1-3	Upgraded Sewers.....	1-11
Table 1-4	Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation	1-17
Table 3-1	Related Projects	3-6
Table 4-1	Stormwater Basins	4-7
Table 4-2	New Sewers.....	4-9
Table 4-3	Upgraded Sewers.....	4-9
Table 4-5	Estimated Project Site Grading	4-10
Table 4-6	Roadway Grading Quantities and Pavement Areas.....	4-11
Table 4-7	Total Estimated Grading.....	4-13
Table 4-8	Construction Equipment	4-14
Table 5.2-1	Ambient Air Quality Standards for Criteria Pollutants	5.2-6
Table 5.2-2	Attainment Status of Criteria Pollutants in the South Coast Air Basin	5.2-8
Table 5.2-3	Ambient Air Quality Monitoring Summary.....	5.2-9
Table 5.2-4	SCAQMD Significance Thresholds	5.2-11
Table 5.2-5	SCAQMD Localized Significance Thresholds Screening Criteria.....	5.2-12
Table 5.2-6	SCAQMD Localized Significance Thresholds Based on AAQS for Projects Larger Than 5 Acres	5.2-12
Table 5.2-7	Maximum Daily Construction Emissions.....	5.2-14
Table 5.2-8	Regional Operational Emissions.....	5.2-15
Table 5.2-9	Regional Operational Emissions with Stadium Event.....	5.2-16
Table 5.2-10	Construction Emissions.....	5.2-17
Table 5.2-11	Maximum Daily Construction Emissions with Mitigation	5.2-22
Table 5.2-12	Maximum Daily Onsite Construction Localized Emissions – With Mitigation.....	5.2-23
Table 5.2-13	Localized Significance Threshold Dispersion Modeling Results – With Mitigation.....	5.2-24
Table 5.3-1	Plant Communities Onsite.....	5.3-4
Table 5.3-2	Plant Communities in Roadway Alignments, Acres	5.3-8
Table 5.3-3	Waters of the US Onsite	5.3-13
Table 5.3-4	Waters of the US in Roadway Alignments.....	5.3-15
Table 5.3-5	Waters of the State in Roadway Alignments	5.3-15
Table 5.5-1	Landslides on the Project Site.....	5.5-4
Table 5.5-2	Regional Fault Systems.....	5.5-5
Table 5.6-1	Greenhouse Gases and Their Relative Global Warming Potential Compared to CO ₂	5.6-2
Table 5.6-2	Summary of Global Climate Change Risks to California	5.6-4
Table 5.6-3	Scoping Plan Greenhouse Gas Reduction Measures and Reductions toward 2020 Target.....	5.6-7
Table 5.6-4	Project-Related GHG Emissions	5.6-11
Table 5.7-1	Soil Gas Concentrations Detected Onsite Compared to CHHSLs	5.7-6
Table 5.8-1	Existing Drainage Flow Rates and Volumes: Entire 437-Acre Drainage Area.....	5.8-6
Table 5.8-2	Construction BMPs.....	5.8-11
Table 5.8-3	Potential Pollutants Created by Land Use Type	5.8-13
Table 5.8-4	Treatment Control BMP Selection Matrix	5.8-16



List of Tables

Table		Page
Table 5.8-5	Drainage Flow Rates and Volumes: Existing and Postproject Conditions (Entire drainage area)	5.8-19
Table 5.8-6	Proposed Detention and Retention Areas.....	5.8-20
Table 5.10-1	Typical Noise Levels.....	5.10-3
Table 5.10-2	Human Reaction to Typical Vibration Levels.....	5.10-4
Table 5.10-3	Land Use Compatibility for Community Noise Exposure (State of California).....	5.10-6
Table 5.10-4	County of Los Angeles Exterior Noise Standards.....	5.10-7
Table 5.10-5	County of Los Angeles Maximum Construction Noise Limits (dBA L _{max}).....	5.10-8
Table 5.10-6	Groundborne Vibration Criteria: Human Annoyance	5.10-9
Table 5.10-7	Groundborne Vibration Criteria: Architectural Damage	5.10-10
Table 5.10-8	Noise Measurements Along Local Roadways.....	5.10-11
Table 5.10-9	Existing Traffic Noise Levels.....	5.10-12
Table 5.10-10	Offsite Traffic Noise Increases: Existing plus Project.....	5.10-17
Table 5.10-11	Off-Site Traffic Noise Increases: 2014 Conditions.....	5.10-18
Table 5.10-12	Offsite Traffic-Noise Increases: Buildout Conditions.....	5.10-19
Table 5.10-13	Offsite Traffic-Noise Impacts	5.10-21
Table 5.10-14	Noise Monitoring at a La Quinta High School Football Game.....	5.10-24
Table 5.10-15	Stadium Noise	5.10-27
Table 5.10-17	Vibration Annoyance	5.10-35
Table 5.10-19	Predictive Noise Results for Roadway Construction Activities.....	5.10-38
Table 5.11-1	Population Forecast, SCAG	5.11-2
Table 5.11-2	Population Forecast, SCVAP.....	5.11-2
Table 5.11-3	Housing Units and Households	5.11-3
Table 5.11-4	SCAG Households Forecasts: North Los Angeles County Subregion	5.11-3
Table 5.11-5	Santa Clarita Valley Area Plan Households Forecast	5.11-3
Table 5.11-6	SCAG Employment Forecast: North Los Angeles County Subregion.....	5.11-4
Table 5.13-1	Public Parks within Five Miles of Project Site.....	5.13-1
Table 5.14-1	Topics Analyzed in Traffic Studies	5.14-2
Table 5.14-2	Study Area Roadways	5.14-2
Table 5.14-3	Existing Intersections	5.14-3
Table 5.14-4	Intersection Levels of Service.....	5.14-3
Table 5.14-5	Existing Intersection ICU and LOS (2010).....	5.14-4
Table 5.14-6	Roadway Segment Daily Traffic Volumes, Existing Conditions (2010).....	5.14-5
Table 5.14-7	Northern Access Roads	5.14-7
Table 5.14-8	Access Roads Scenarios Summary	5.14-8
Table 5.14-9	Project Trip Generation	5.14-8
Table 5.14-10	Intersection ICU and LOS, Existing plus 1,600-Student Project Conditions, Scenario 1	5.14-10
Table 5.14-11	Intersection ICU and LOS, Existing Plus 2,600-Student Project Conditions, Scenario 1	5.14-10
Table 5.14-12	Intersection ICU and LOS, Existing plus 1,600-Student Project Conditions, Scenario 2	5.14-11
Table 5.14-13	Intersection ICU and LOS, Existing plus 2,600-Student Project Conditions, Scenario 2	5.14-12
Table 5.14-14	Related Projects	5.14-13
Table 5.14-15	Forecast Trip Generation by Related Projects	5.14-13
Table 5.14-16	Intersection ICU and LOS, 2014 Without-Project Conditions	5.14-14

List of Tables

Table		Page
Table 5.14-17	Intersection ICU and LOS, 2014 With-Project Conditions, 1,600 Students, Scenario 1.....	5.14-15
Table 5.14-18	Intersection ICU and LOS, 2014 With-Project Conditions, 1,600 Students, Scenario 2.....	5.14-16
Table 5.14-19	Intersection ICU and LOS, 2014 With-Project Conditions, 2,600 Students, Scenario 1.....	5.14-17
Table 5.14-20	Intersection ICU and LOS, 2014 With-Project Conditions, 2,600 Students, Scenario 2.....	5.14-18
Table 5.14-21	Intersection ICU and LOS, General Plan Buildout Without Project with Long Range Highway Improvements	5.14-20
Table 5.14-22	Intersection ICU and LOS, Buildout Conditions with Long-Range Highway Improvements, 2,600 Students, Scenario 1	5.14-21
Table 5.14-23	Scenario 2: Intersection ICU and LOS, Buildout Conditions with Long-Range Highway Improvements (2,600 Students).....	5.14-22
Table 5.14-24	Scenario 1 - Option A: Intersection LOS, Proposed Intersections, AM Peak Hour	5.14-23
Table 5.14-25	Scenario 2 - Option A: Intersection LOS, Proposed Intersections, AM Peak Hour	5.14-24
Table 5.14-26	Scenario 2 - Option B: Intersection LOS, Proposed Intersections, AM Peak Hour	5.14-24
Table 5.14-27	Impacts Summary	5.14-25
Table 5.14-28	I-5 Freeway Existing Volume to Capacity Ratios.....	5.14-27
Table 5.14-29	Freeway Volumes and V/C Ratios: 2014 Conditions with 2,600-Student School	5.14-27
Table 5.14-30	Scenario 1: Existing Plus Project Intersection Traffic Impacts with Mitigation.....	5.14-37
Table 5.14-31	Scenario 1: Short-Term 2014 With-Project (1,600 Students) Intersection LOS with Mitigation	5.14-38
Table 5.14-32	Scenario 1: Short-Term 2014 With-Project (2,600 Students) Intersection LOS with Mitigation	5.14-39
Table 5.14-33	Scenario 2: Short-Term 2014 With-Project (1,600 and 2,600 Students) Intersection LOS with Mitigation	5.14-40
Table 5.14-34	Scenario 1: Buildout With-Project (2,600 Students) Intersection LOS with Mitigation.....	5.14-40
Table 5.14-35	Scenario 2: Buildout With-Project (2,600 Students) Intersection LOS with Mitigation.....	5.14-41
Table 5.14-36	Significant and Unavoidable Impacts.....	5.14-41
Table 5.15-1	Forecast Existing and Planned Water Supplies	5.15-2
Table 5.15-2	Proposed New Sewers	5.15-8
Table 5.15-3	Proposed Upgraded Sewers.....	5.15-8
Table 5.13-4	Drainage Flow Rates and Volumes: Existing and Postproject Conditions	5.15-9
Table 5.13-5	Proposed Detention and Retention Areas.....	5.15-9
Table 5.15-6	Chiquita Canyon and Sunshine Canyon Landfills	5.15-12
Table 6.1	Significant Traffic Impacts before Mitigation	6-4
Table 6.2	Significant and Unavoidable Traffic Impacts after Mitigation	6-4
Table 7-1	Utility Demands, No Project/Previously Approved Development Alternative	7-11
Table 7-2	Traffic Impacts Summary: Reduced Intensity Alternative	7-18



List of Tables

Table		Page
Table 7-3	Comparison of Alternatives to the Proposed Project	7-37
Table 8-1	Impacts Found Not to Be Significant	8-2

Abbreviations and Acronyms

AAQS	ambient air quality standards
AB	assembly bill
ADT	average daily traffic
afy	acre-feet per year
AHMP	all-hazard mitigation plan
amsl	above mean sea level
AQMP	air quality management plan
BAU	business as usual
bgs	below ground surface
BLM	Bureau of Land Management
BMP	best management practices
BP	before present
C&D	construction and demolition
CAA	Clean Air Act
Cal/EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officer's Association
CARB	California Air Resources Board
CAT	Climate Action Team
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDE	California Department of Education
CDFG	California Department of Fish and Game
CDP	Census-designated place
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
cfs	cubic feet per second
CGS	California Geologic Survey
CHHSL	California Human Health Screening Levels
CLWA	Castaic Lake Water Agency
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database



Abbreviations and Acronyms

CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO ₂ e	CO ₂ equivalent
COC	chemical of concern
CSC	California Species of Concern
CSD	community standards district
CUP	Conditional Use Permit
CWA	Clean Water Act
cy	cubic yard
dB	decibel
dBA	A-weighted decibel
dbh	diameter at breast height
DOGGR	Division of Oil, Gas, and Geothermal Resources
DPM	diesel particulate matter
DSA	Department of the State Architect
DTSC	Department of Toxic Substances Control
EIR	Environmental Impact Report
EPA	Environmental Protection Agency (U.S.)
ERP	emergency response plan
fc	foot-candle
FCAA	(see CAA)
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	flood insurance rate map
FTA	Federal Transit Administration
GCP	general construction permit (stormwater)
GHG	greenhouse gas
gpd	gallons per day
GWH	gigawatts per hour
GWP	global warming potential
HAP	hazardous air pollutant
HCP	habitat conservation plan
HHMD	Health Hazardous Materials Division

Abbreviations and Acronyms

ICU	intersection capacity utilization
IPCC	Intergovernmental Panel on Climate Change
kWh	kilowatts per hour
LACoFD	Los Angeles County Fire Department
LACSD	Sanitation Districts of Los Angeles County
LACWWD	Los Angeles County Waterworks District
LADPW	Los Angeles County Department of Public Works
LCFS	Low Carbon Fuel Standard
L _{dn}	day-night noise level
L _{eq}	equivalent continuous noise level
LESA	land evaluation and site assessment
LID	low impact development
LOS	level of service
LST	localized significance thresholds
MBTA	Migratory Bird Treaty Act
mcy	million cubic yards
Metro	Los Angeles County Metropolitan Transportation Authority
mgd	million gallons per day
MMI	Modified Mercalli Intensity Scale
MMTons	million metric tons
MND	mitigated negative declaration
MOU	memorandum of understanding
MPO	metropolitan planning organization
MTon	metric ton
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NCWD	Newhall County Water District
NHPA	National Habitat Preservation Authority
NO _x	nitrogen oxides
NOI	notice of intent
NPDES	National Pollution Discharge Elimination System
O ₃	ozone
OES	Office of Emergency Services
Pb	lead



Abbreviations and Acronyms

PCE	perchloroethylene
PEA	preliminary environmental assessment
PM	particulate matter
ppm	parts per million
PPV	peak particle velocity
psi	pounds per square inch
RCB	reinforced concrete box
RCP	reinforced concrete pipe
RPS	renewable portfolio standard
RTP	regional transportation plan
RWQCB	Regional Water Quality Control Board
SAA	streambed alteration agreement
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCE	Southern California Edison
SCGC	Southern California Gas Company
SCS	Sustainable Community Strategy
SCVAP	Santa Clarita Valley Area Plan
SCVSD	Santa Clarita Valley Sanitation District
SEA	significant ecological area
SMD	Los Angeles County Sewer Maintenance District
SoCAB	South Coast Air Basin
SO _x	sulfur oxides
SRA	Source Receptor Area
SUSMP	standard urban stormwater mitigation plan
SVOC	semivolatile organic compounds
SWP	State Water Project
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminants
TCE	trichloroethylene
TDS	total dissolved solids

Abbreviations and Acronyms

TMDL	total maximum daily load
USACE	US Army Corps of Engineers
USFWS	US Fish and Wildlife Service
UWMP	urban water management plan
V/C	volume-to-capacity ratio
VdB	velocity decibels
VMT	vehicle miles traveled
VOC	volatile organic compounds
VWC	Valencia Water Company
WRP	water reclamation plant



Abbreviations and Acronyms

This page intentionally left blank.

1. *Executive Summary*

1.1 INTRODUCTION

This Draft Environmental Impact Report (Draft EIR) addresses the environmental effects associated with the implementation of the proposed Castaic High School project. The California Environmental Quality Act (CEQA) requires that local government agencies, prior to taking action on projects over which they have discretionary approval authority, consider the environmental consequences of such projects. An Environmental Impact Report (EIR) is a public document designed to provide the public and local and State governmental agency decision-makers with an analysis of potential environmental consequences to support informed decision-making. This document focuses on those impacts determined to be potentially significant as discussed in the Initial Study completed for this project (see Appendix A).

This Draft EIR has been prepared pursuant to the requirements of CEQA, and the William S. Hart Union High School District (District)'s CEQA procedures. The District, as the lead agency, has reviewed and revised as necessary all submitted drafts, technical studies, and reports to reflect its own independent judgment, including reliance on applicable City technical personnel from other departments and review of all technical subconsultant reports.

Data for this Draft EIR was obtained from on-site field observations, discussions with affected agencies, analysis of adopted plans and policies, review of available studies, reports, data and similar literature, and specialized environmental assessments (aesthetics, air quality, biological resources, cultural resources, geological resources, hazards and hazardous materials, hydrology and water quality, noise, and transportation and traffic).



1.2 ENVIRONMENTAL PROCEDURES

This Draft EIR has been prepared pursuant to CEQA to assess the environmental effects associated with implementation of the proposed project, as well as anticipated future discretionary actions and approvals. The six main objectives of this document as established by CEQA are listed below:

- 1) To disclose to decision makers and the public the significant environmental effects of proposed activities.
- 2) To identify ways to avoid or reduce environmental damage.
- 3) To prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures.
- 4) To disclose to the public reasons for agency approval of projects with significant environmental effects.
- 5) To foster interagency coordination in the review of projects.
- 6) To enhance public participation in the planning process.

1. Executive Summary

An EIR is the most comprehensive form of environmental documentation identified in CEQA and the CEQA Guidelines and provides the information needed to assess the environmental consequences of a proposed project, to the extent feasible. EIRs are intended to provide an objective, factually supported, full-disclosure analysis of the environmental consequences associated with a proposed project that has the potential to result in significant, adverse environmental impacts.

An EIR is also one of various decision-making tools used by a lead agency to consider the merits and disadvantages of a project that is subject to its discretionary authority. Prior to approving a proposed project, the lead agency must consider the information contained in the EIR, determine whether the EIR was properly prepared in accordance with CEQA and the CEQA Guidelines, determine that it reflects the independent judgment of the lead agency, adopt findings concerning the project's significant environmental impacts and alternatives, and must adopt a Statement of Overriding Considerations if the proposed project would result in significant impacts that cannot be avoided.

1.2.1 EIR Format

This Draft EIR has been formatted as described below.

Section 1. Executive Summary: Summarizes the background and description of the proposed project, the format of this EIR, project alternatives, any critical issues remaining to be resolved, and the potential environmental impacts and mitigation measures identified for the project.

Section 2. Introduction: Describes the purpose of this EIR, background on the project, the Notice of Preparation, the use of incorporation by reference, and Final EIR certification.

Section 3. Project Description: A detailed description of the project, the objectives of the proposed project, the project area and location, approvals anticipated to be included as part of the project, the necessary environmental clearances for the project, and the intended uses of this EIR.

Section 4. Environmental Setting: A description of the physical environmental conditions in the vicinity of the project as they existed at the time the Notice of Preparation was published, from both a local and regional perspective. The environmental setting provides baseline physical conditions from which the lead agency determines the significance of environmental impacts resulting from the proposed project.

Section 5. Environmental Analysis: Provides, for each environmental parameter analyzed, a description of the thresholds used to determine if a significant impact would occur; the methodology to identify and evaluate the potential impacts of the project; the existing environmental setting; the potential adverse and beneficial effects of the project; the level of impact significance before mitigation; the mitigation measures for the proposed project; the level of significance of the adverse impacts of the project after mitigation is incorporated and the potential cumulative impacts associated with the proposed project and other existing, approved, and proposed development in the area.

Section 6. Significant Unavoidable Adverse Impacts: Describes the significant unavoidable adverse impacts of the proposed project.

Section 7. Alternatives to the Proposed Project: Describes the impacts of the alternatives to the proposed project, including the No Project Alternative, and a Reduced Intensity Alternative.

1. Executive Summary

Section 8. Impacts Found Not to Be Significant: Briefly describes the potential impacts of the project that were determined not to be significant by the Initial Study and were therefore not discussed in detail in this EIR.

Section 9. Significant Irreversible Changes Due to the Proposed Project: Describes the significant irreversible environmental changes associated with the project.

Section 10. Growth-Inducing Impacts of the Project: Describes the ways in which the proposed project would cause increases in employment or population that could result in new physical or environmental impacts.

Section 11. Organizations and Persons Consulted: Lists the people and organizations that were contacted during the preparation of this EIR for the proposed project.

Section 12. Qualifications of Persons Preparing EIR: Lists the people who prepared this EIR for the proposed project.

Section 13. Bibliography: A bibliography of the technical reports and other documentation used in the preparation of this EIR for the proposed project.

Appendices. The appendices for this document (on CD attached to the back cover) contain the following supporting documents:

Appendix A	NOP and Comments
Appendix B	Public Services
Appendix C	Aesthetics
Appendix D	Air Quality and Greenhouse Gas Emissions
Appendix E	Biological Resources
	E-1 Biology Report_July 2012
	E-2 Mitigation Plan_July 2011
	E-3 Bio Report_July 2010
	E-4 Oak Tree Report_April 2010
	E-5 Oak Tree Report_June 1989
Appendix F	Geology and Soils
	F-1 Geohazards_Nov 2010
	F-2 Geohazards_May 2010
Appendix G	Hazards and Hazardous Materials
	G-1 Tank Assessment_July 2012
	G-2 Phase I_March 2012
	G-3 PEA_March 2011
	G-4 Phase I_Feb 2010
Appendix H	Hydrology and Water Quality
Appendix I	Noise
Appendix J	Transportation and Traffic
	J-1 Supplemental Traffic_May 2012
	J-2 Traffic Study_Jan 2012
	J-3 Traffic Study_Oct 2011
	J-4 Supplemental Traffic_Oct 2011
	J-5 Supplemental Traffic_June 201



1. Executive Summary

1.2.2 Type and Purpose of This Draft EIR

This Draft EIR has been prepared as a “Project EIR” as defined by State CEQA Guidelines (Section 15161, California Code of Regulations, Title 14, Division 6, Chapter 3). This type of EIR examines the environmental impacts of a specific development project and should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project including planning, construction, and operation.

1.3 PROJECT LOCATION

The proposed Castaic High School project site is located in the community of Castaic, an unincorporated area of Los Angeles County, California (see Figure EX-1, *Regional Location*). The nearest city is Santa Clarita about five miles south; Castaic Lake is northeast, east of the I-5, and the Los Padres National Forest is to the north.

The project site encompasses land east and west of Romero Canyon Road. The proposed site includes APNs 3247-068-001, -002, -003, and -004; parcels 1, 2, 3 and 4 of Tract 47807 (see Figure EX-2, *Local Vicinity*). Parcels 1 and 4 are owned by Romero Canyon LLC; and parcels 2 and 3 (formerly the Lombardi property) are owned by Romero Canyon II, LLC.

The whole project site is 198 acres (includes all four parcels); the proposed school campus would be built on approximately 71.4 acres. The eastern site boundary is approximately two miles west of the intersection of Parker Road and Sloan Canyon Road; and the southern site boundary is approximately two miles north of the intersection of Hasley Canyon Road and Romero Canyon Road. Regional access to the existing site is from Interstate 5 (I-5) via Hasley Canyon Road or Lake Hughes Road / Sloan Canyon Road. Existing local access to the site is via Romero Canyon Road from Hasley Canyon Road or Sloan Canyon Road to Baringer Road to Romero Canyon Road.

1.4 PROJECT DESCRIPTION

1.4.1 School Facilities

The proposed project consists of a comprehensive high school with approximately 250,000 square feet of building area, including several classroom buildings, a library, a performing arts building, a multipurpose building, a physical education building with gymnasium, and an administrative building (see Figure EX-3, *Conceptual Site Plan*). At this time the campus buildings are planned to be one and two stories tall. However, plans are subject to change as they are refined, and some of the final building plans may call for three stories. Athletic facilities would include a 5,000-seat football/soccer stadium with a running track, tennis courts, basketball courts, baseball and softball fields, and other play fields. The stadium and other fields would have nighttime lighting for evening sports events. The tallest structures on campus are likely to be the light poles at the stadium, which typically reach 80 to 90 feet.

1.4.2 Other Facilities

Helipad. The Los Angeles County Fire Department (LACoFD) has requested the grading of a pad on which it could build a helipad to serve the Castaic area. Construction and operation of the helipad would be the responsibility of the LACoFD. The District has agreed to include a 1.1-acre flat pad at an elevation of 2,010 feet above mean sea level (amsl) to accommodate the County’s request.

1. Executive Summary

Water tanks. The project would include grading of a 0.46-acre pad for two aboveground water tanks. The pad would be at the southwest corner of the project site, west of the helipad. Construction of one 750,000-gallon water tank would be included in the project with water serving the new high school. The second water tank would serve future residential development that is already approved for the surrounding area. Construction of the second tank is not part of the proposed project. The tank pad would be at an elevation of 2,050 amsl.

Currently the District is undecided on a few additional facilities.

Broadcasting facilities. If the district decides to include broadcasting facilities, then cellular, television, and satellite transmission towers would potentially be located on one of the hilltops outside the main campus.

Energy technology. The school may also include advanced energy technology, such as solar photovoltaic panels for electricity and stormwater runoff storage facilities for dry weather irrigation.

1.4.3 School Programs

Traditional School. The high school is expected to open with ninth grade students only during the first year of operation (2015–2016). Tenth, eleventh and twelfth grades would be added in successive years as the initial 9th grade students move up in grade. Current enrollment projections for all grade levels are 320 in 2015, 638 in 2016, 986 in 2017, and 1,316 in 2018. The school would have a full buildout design capacity of 2,600 students.

Typical high schools in the district operate on a traditional single-track, two-semester, 180-day calendar. School instruction hours are usually from 8:00 AM to 3:00 PM, with staff and students arriving on campus between 7:00 AM and 8:00 AM and leaving between 3:00 PM and 5:00 PM. High school facilities, including auditoriums, gymnasiums, and fields, are typically used from 7:00 AM to 11:00 PM, including Saturdays and Sundays. Hours of operation during the summer months generally range between 7:00 AM to 7:00 PM (longer at some district high schools during athletic events).

Summer School. Summer school sessions typically run between mid-June through mid-August from about 8:00 AM to 12:30 PM. The number of students, faculty, and staff attending the summer sessions would vary from year to year, depending on student need and available capacity.

School-Related Events. The proposed project may have after-school programs for the students, such as athletic activities, special-interest clubs, and extracurricular activities. Additionally, the proposed high school may have occasional nighttime events during the school year. Some of these events would be campus wide, such as school plays and open house, and others would be grade specific, such as commencement.

Career Tech Program. The school may include a career technical program offering a specialized curriculum. The campus may offer both a traditional high school program and a career technology education (CTE) program, or use the new school for a full CTE high school.

Adult School. Adult education programs may take place Monday through Thursday outside of normal school hours (between 6:00 PM and 9:00 PM). The number of students, faculty, and staff attending the adult education sessions would vary depending on need.

Community Use. According to California Education Code 38131(b), Civic Center Act, when facilities within the District are not scheduled for school- or District-related events, the public can obtain a permit from the District to utilize the facilities. For example, nonprofit community organizations and members of the public



1. Executive Summary

are permitted to use school facilities for supervised recreational activities, meetings, and public discussions. Operation of the school facilities for community use may occur outside normal school operating hours, generally between 3:00 PM and 10:00 PM during the weekdays and all day on the weekends, and may include use by churches on Sundays

Community uses may vary, depending on events planned by the District, the community's needs, and applications for permits. Typical district high schools have spring and winter theater programs for up to five different groups. The programs last three to four days (rehearsals three days, performances one to two days) and hours vary depending on after-school programs. Attendance at programs vary from 300 to 600 (adults and children).

City of Santa Clarita basketball practice takes place during the week, games on Saturdays (times vary from 8 AM to 10 PM). Attendance varies between 50-100 per game. Basketball organizations (possibly three different groups) practice during the week, with games on Saturday's and Sunday's. Attendance varies between 50 to 100 per game. Parking for civic center uses would be provided by the onsite parking lot.

1.4.4 Roadway Infrastructure

A supporting road network is not anticipated until approved residential development starts construction. Considering the poor economy, residential construction projects may not happen for years. However, the high school is currently needed to relieve overcrowding at existing high schools and to serve the local community; therefore, the school district would be required to extend existing roadways to the school site. There are two access scenarios and various suboptions under consideration by the District, as described below.

Access Scenario 1

Access Scenario 1 provides public access along a route that begins as an extension of Sloan Canyon Road to the high school campus. The District is considering two options for the extension of Sloan Canyon Road to the campus. These options are as follows:

Option A

1. Sloan Canyon Road west to Mandolin Canyon Road
2. Mandolin Canyon Road north to Harp Canyon Road
3. Harp Canyon Road west to North Romero Canyon Road
4. North Romero Canyon Road south to Valley Creek Road
5. Valley Creek Road to the school access point

Option B

1. Sloan Canyon Road west to Canyon Hill Road
2. Canyon Hill Road west to Valley Creek Road at school access point

1. Executive Summary

Access Scenario 1 also provides emergency-only access along a southern route (Romero Canyon Road). An emergency-access gate would be constructed on Romero Canyon Road just south of Baringer Road. The gate must be at least 20 feet wide, and must be approved by the Los Angeles County Fire Department.

As explained in the Section 5.14, *Traffic and Transportation*, Access Scenario 1 is adequate to provide access for the high school with up to 1,600 students. Prior to exceeding this 1,600-student limit, the District must complete one of the following: 1) widen the pavement and restripe the northern public access route to provide four lanes of travel (two lanes in each direction; only possible with Option A); 2) complete the southern public access route (Access Scenario 2); or 3) make a finding that other roads in the area have been fully constructed by others and that these roads will provide adequate access to accommodate the ultimate school capacity of 2,600 students.

Access Scenario 2

Access Scenario 2 includes the same northern public access road options as Access Scenario 1, but is combined with a southern public access road connecting the campus to Hillcrest Parkway. This proposed route follows existing dirt roads.

1. Sloan Canyon Road north beginning at the western end of Hillcrest Parkway
2. Baringer Road west to Valley Creek Road
3. Romero Canyon Road/Valley Creek Road north to campus.

Roadway Improvements

All public roadway improvements associated with this project would include a five-foot concrete sidewalk along one side of the road and a 4-foot-wide, on-road unmarked space for bicyclists (Class III bike route¹). As residential development comes into the area, a multi-purpose trail would be constructed along the opposite side of the road. The multi-purpose trail would not be constructed as part of the school project, except on the project site as part of the drainage facility service roads. Other on- and off-site trails would be determined by the Los Angeles County Parks and Recreation Department. While the District is considering various options for these roadways, subject to approval by the County, the amount of grading required and the areas disturbed are based on grading for the full width right-of-way of the road classifications. The various roadway improvement options are presented in Appendix I-3 (Supplemental Traffic Study May 2012).

Valley Creek Road would start on Romero Canyon Road at the school property line and encircle the east and north side of the campus. It would be developed as a two-lane undivided roadway either 28 or 30 feet wide. Valley Creek Road would bridge over Los Angeles County Romero Canyon flood plain limits.

Sloan Canyon Road. Sloan Canyon Road would be a 40-foot-wide roadway with two 14-foot-wide lanes (one in each direction) and a 12-foot-wide striped median. Signs would be installed identifying a Class III bike path adjacent to each curb (no striping).

¹ The Streets and Highway Code Section 890.4 defines a "Bikeway" as a facility that is provided primarily for bicycle travel.

(1) Class I Bikeway (Bike Path). Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with crossflow by motorists minimized.

(2) Class II Bikeway (Bike Lane). Provides a striped lane for one-way bike travel on a street or highway.

(3) Class III Bikeway (Bike Route). Provides for shared use with pedestrian or motor vehicle traffic.



1. Executive Summary

Canyon Hill would be developed as a two-lane undivided roadway either 28 or 30 feet wide.

Baringer Road would be developed as a two-lane roadway 28 to 32 feet wide. Baringer Road would bridge over Los Angeles County Romero Canyon flood plain limits.

Romero Canyon Road. Romero Canyon Road would serve as an emergency-only route. An emergency-access gate meeting LACoFD specifications would be constructed on Romero Canyon Road just south of Baringer Road. and turn-outs would be constructed on the north and south sides of the gate.

1.4.5 Parking

Five separate on-site paved parking lots are planned for the proposed high school. The five parking lots would provide 868 parking spaces. The main student/visitor parking lot would be on the northeastern portion of the site near the main access route off Canyon Oak Road and provide 360 parking spaces. There would be two staff/event parking lots with one to the north and south of the student/visitor parking lot. The northern lot would provide 173 parking spaces and the southern lot would provide 143 parking spaces. The remaining two parking lots in the southern portion of campus would primarily serve as event parking and would provide 129 and 63 parking spaces. In addition to the on-site paved parking lots, the two areas east and south of the main campus designated as Retention Basins A₁ and A₂ would be used as overflow event parking, as necessary.

The overflow parking area would be used only when needed for large events such as football games or graduation ceremonies. These events are held during the dry season when the basins are not used for stormwater retention.

1.4.6 Utilities

Development of the site would require infrastructure that currently does not exist. On- and offsite storm drains, and extensions of existing utilities, including sewer, water, telecommunications, and electricity are included in the project. The utilities would be extended from Quail Valley Road along Sloan Canyon Road to the project site.

Stormwater Drainage

Stormwater on the campus would discharge into holding basins on the perimeter of the campus. Detention basins perform temporary containment of stormwater followed by controlled release of water into a downstream drainage facility or stream. Retention involves removal of stormwater from a basin by evaporation, infiltration into the soil, or pumps, and does not involve any discharge. Evaporation basins are similar to retention basins but are shallow so only a few inches of water is retained and will quickly evaporate.

The total drainage area in post-project condition would increase to 444 acres, or about 1.5 percent larger than the existing drainage area (437 acres). The larger drainage area along with a significant increase in impervious surfaces (roads, hard courts, walkways, parking lots, etc.) would increase stormwater runoff from the project site. Total impervious area is approximately 46 acres for all school building areas, roads, walkways, paved parking areas, and paved sports areas.

In compliance with Los Angeles County requirements, the project has been designed to include stormwater basins that would reduce offsite post-project drainage flow rate and volume to the same as the existing rate and volume. The total volume required for holding in the basins is the net post-project increase during a 50-

1. Executive Summary

year clear condition: currently 14.86 acre-feet. The net increase in flow rate that must be held onsite by drainage facilities is 74 cubic feet per second (cfs).

Proposed stormwater facilities are described in Table 1-1.

Table 1-1
Stormwater Basins

Designation and Facility	Location	Area¹	Depth	Volume²
A1 Evaporation Basin	South	4.59	10 inches	3.825
A2 Evaporation Basin	Southeast	8.19	10 inches	6.825
B1 Retention Basin	North	0.51	5 feet	2.55
B2 Retention Basin	Southeast	0.58	5 feet	2.9
C1 Evaporation Basin	Northwest	2.66	10 inches	2.22
C2 Evaporation Basin	West	1.31	10 inches	1.09
Total		17.84		19.41

Source: Sikand 2012

¹ Area is shown in acres

² Volume is shown in acre-feet

- Basin A1 drainage area includes the softball fields, event parking lot, and other southwest portions of the campus.
- Basin A2 drainage area includes the football field event parking lot and other central portion of the campus, along with overflow from Basin A1.
- Basin B1 drainage area includes the baseball field, the tennis courts, and the northern part of the campus.
- Basin B2 drainage area includes the parking lots along the front of the campus and the overflow from Basin B1. Basin B2 would have an overflow pipe that would discharge into an engineered swale along the Valley Creek Road. Water in this swale would discharge to Romero Canyon and follow the existing course south.
- Basin C1 and C2 drainage area is the landslide removal area.



Off-Campus Drainage

A swale outlet would convey drainage from engineered slopes along a drainage channel on the north side of Canyon Hill Road to a culvert about 600 feet east of Valley Creek Road. The culvert would run under Canyon Hill Road to convey existing stormwater flows to the existing natural channel along Sloan Canyon.

Drainage from Romero Canyon and East Canyon north of the school site would be directed into a drainage channel along the north side of Valley Creek Road. The drainage channel would run along the road, crossing under Canyon Hill Road. The drainage channel would discharge into a reinforced concrete box (RCB) culvert about 440 feet in length that would pass under Valley Creek Road and discharge into an engineered swale just west of Valley Creek Road. The swale would continue southward till it would discharge into the existing Romero Canyon natural drainage at the school site boundary.

1. Executive Summary

Valley Creek Road would bridge East Canyon natural drainage channel about 300 feet north of the south site boundary. Roadway protection to reduce erosion along the east side of Valley Creek Road would be installed underground for a length of approximately 600 feet starting 500 feet south of the site boundary and extending north. Four optional designs are being considered for roadway protection: one of concrete; one of shotcrete – concrete sprayed through a hose; welded wire and rock revetment; or soil cement – natural soil mixed with a small amount of portland cement and water.

Baringer Road would intersect with Valley Creek Road at a 90-degree knuckle intersection. Two options are proposed for this intersection. Option 1 would locate the intersection would be about 400 feet south of the south site boundary. Baringer Road would bridge the Romero Canyon natural drainage; the bridge would be about 105 feet long. In Option 2 the west end of Baringer Road would be shifted south about 95 feet. Baringer Road would cross Romero Canyon with a 50-foot-long bridge or a concrete arch culvert.

Baringer Road and Sloan Canyon Road Crossings over Sloan Canyon

Three options are under consideration for the intersection of Baringer Road with Sloan Canyon Road along the southern access route. Option 1 includes construction of two roads on the existing rights-of-way. Baringer Road crosses Sloan Canyon just west of the intersection, and Sloan Canyon Road crosses Sloan Canyon just south of that intersection. Sloan Canyon would pass under each roadway in a culvert in this option.

Options 2A and 2B would construct Baringer Road and Sloan Canyon Road connecting through a curve west of Sloan Canyon; a side road from Sloan Canyon Road would be built in these options to provide access from Baringer Road to and from Sloan Canyon Road to the north. In options 2A and 2B Sloan Canyon would pass under Sloan Canyon Road in a culvert; the side road would pass over Sloan Canyon via a bridge about 80 feet long.

Sewers

The project also includes an application to the Santa Clarita Valley Sanitation District, part of the Sanitation Districts of Los Angeles County (LACSD), to annex the project site from Los Angeles County to Santa Clarita Valley.

Development of the proposed project would include the installation of new sewer lines, which would connect to existing sewer systems. The project, in combination with development of nearby planned projects, would also require upgrades to some existing sewers between the end of the existing sewer main from Quail Valley Road to the LACSD trunk sewer at the Ridge Route Road and Neely Street intersection. Proposed new sewers are shown in Table 1-2 and sewer upgrades are shown in Table 1-3.

1. Executive Summary

**Table 1-2
New Sewers**

Roadway	Segment	Diameter, inches
Valley Creek Road	North site boundary to intersection Valley Creek Road and Canyon Hill Road	8 inches
Canyon Hill Road	Valley Creek Road to Sloan Canyon Road	8 inches
Sloan Canyon Road	Canyon Hill Road to about 0.25 mile west of Quail Valley Road	8 inches
Sloan Canyon Road	About 0.25 mile west of Quail Valley Road to Quail Valley Road	10 inches

Source: Sikand 2012.

**Table 1-3
Upgraded Sewers**

Roadway	Segment Location	Facility No.	Length, feet	Diameter, inches	
				Existing	Upgrade
Sloan Canyon Road	Quail Valley Road to Parker Road	PC 10569	343	8	12
Cherry Drive	Gold Hill Drive to north of Church Street	PC 9706	988	8	12
Sloan Canyon Road	The Old Road to Castaic Road		549	10	15
Castaic Road	Part of segment between Lake Hughes Road and Ridge Route Road	PC 9173	691	8	12
		9704	348	10	18
		2598-M	346	8	15
		9704	346	10	15
		2598-M	527	8	15
			271	8	12

Source: Sikand 2012



Water

The project site is currently in the service area of Los Angeles County Water Works District 36 (LACWWD 36). The current property owner has submitted an application to the Newhall County Water District (NCWD) to annex the project site from LACWWD 36 to NCWD. That annexation would also require approval from LACWWD 36 and from the Local Agency Formation Commission of Los Angeles County. It is expected that action on that annexation would be completed after the final EIR for the proposed project is considered for certification by the District's governing board. A 750,000-gallon water tank would be constructed on a hill above the campus and would serve the high school. The tank would be built, operated, and maintained by NCWD.

Two pump stations would be built offsite. One station would be about 0.5 mile east of the project site along the south side of Sloan Canyon Road. The second station would be at least 300 feet north of the project site in Tract 46443. Each station would be enclosed in a block wall building about 50 by 75 feet in floor dimensions.

Electricity, Phone & Cable

Electric, phone, and cable lines would run under Sloan Canyon Road and other access roads.

1. Executive Summary

1.5 SUMMARY OF PROJECT ALTERNATIVES

CEQA states that an EIR must address “a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives” (14 Cal. Code of Reg. 15126.6[a]). As described in Section 7.0 of this EIR, six project alternatives were identified and analyzed for relative impacts as compared to the proposed project:

1. No Project/No Development Alternative
2. No Project/Approved Development Alternative
3. Reduced Intensity Alternative
4. Romero Canyon Alternative Site
5. Hasley-Sloan Alternative Site
6. Sterling Gateway Alternative Site

Please refer to Chapter 7.0 of this EIR for a complete discussion of how the alternatives were selected and the relative impacts associated with each alternative. The following presents a summary of each of the alternatives analyzed in the EIR.

1.5.1 Alternative 1 – No Project/No Development Plan Alternative

Under the No Project/No Development alternative, the project is not developed and no other development occurs onsite. Conditions onsite remain as they are; that is, undeveloped land with natural terrain vegetated with chaparral, sagebrush, disturbed coast live oak woodland, and grassland. Developments have been approved on numerous nearby tracts, including single-family residential developments and one elementary school. In the No Project/No Development alternative, it is assumed that the project site would remain undeveloped while other nearby tracts was developed.

1.5.2 Alternative 2 – No Project/Previously Approved Development

In the No Project / Previously Approved Development Alternative, the proposed high school is not developed and the site would be developed with a 79-unit development of detached single-family homes that was approved by Los Angeles County in 1992 but was not developed. This residential development was the subject of a previously adopted Mitigated Negative Declaration (MND) prepared by Bright and Associates in 1985, and various agency approvals have been obtained. A Vesting Tentative Tract No. 47807 and associated Conditional Use Permit 89-213 and Oak Tree Permit No. 89-213, and grading plan for the first phase of grading were approved in 1992 for a 79-lot residential tract. The owner also has obtained a Section 404 permit from the U.S. Army Corps of Engineers, a Section 401 Water Quality Certification from the Los Angeles Regional Water Quality Control Board, and a Section 1602 Streambed Alteration Agreement from the California Department of Fish and Game. These approvals and permits are in place, which would allow the owner to proceed with residential development once a mitigation plan is approved or impact fees are paid.

The residential uses previously approved for the site are used here for the No Project/Existing General Plan Alternative rather than estimating what might be approved for the site under current General Plan land use designation. The approved 79 dwelling units were to have been developed on about 136 acres of parcels 1, 2, and 3, and the southeastern part of parcel 4, of Tract 47807. Access to the approved residences would have been via Romero Canyon Road plus a network of internal roadways. Approximately 62 acres of parcel 4 in this alternative would be left mostly undeveloped; a possible water tank site is situated in the northwest

1. Executive Summary

part of parcel 4, and a planned service road would connect the possible water tank site to planned internal roadways in the central part of the project site.

The estimated number of persons per household in the Santa Clarita Valley Area Plan area in 2008 was 3.26 persons, based on population and household forecasts for that year in the Area Plan. Thus, at full occupancy, this alternative is estimated to house 258 persons. Detached single-family homes are estimated to generate 9.57 vehicle trips per day (ITE 2008); therefore, the 79 units would generate approximately 756 vehicle trips per day.

1.5.3 Alternative 3 – Reduced Intensity Alternative

In this alternative, student capacity would be capped at 1,600 students, which is the maximum enrollment at which one 2-lane public access road via the eastern route, plus gated emergency access via Romero Canyon Road south of the school site, would provide adequate access to the school. Changes to the conceptual site plan in this alternative would include reducing the number of classroom and CTE buildings from eight to five; slight reductions in the size of the gymnasium and performing arts buildings; reducing the numbers of playfields to one baseball field, one softball field, one soccer field, plus the stadium football/soccer field; commensurate reductions in the numbers of hardcourts and tennis courts; and reduction in parking from 868 spaces to about 535 spaces. The size of the campus, including detention/evaporation basins, would be reduced in this alternative from 71.4 acres to about 45 acres. The entire campus in this alternative would be located in the eastern two-thirds of the proposed project campus site, away from the landslide removal area in the western part of the site. One 750,000-gallon aboveground water tank would be developed near the southwest corner of the school site in this alternative and in the proposed project. Operation of the school would be the same as in the proposed project except for the reduction in capacity. Vehicle trip generation by this alternative is estimated at 4,544 trips per day compared to the 7,384 trips per day of the proposed project.



1.5.4 Alternative 4 – Romero Canyon Alternative Site

An Initial Study and Notice of Preparation for this proposed high school site (referenced as Alternative Site 1) was circulated from October 12, 2011 to November 10, 2011.

The site is along the east and west sides of Romero Canyon Road; the eastern site boundary is approximately two miles west of the intersection of Parker Road and Sloan Canyon Road and approximately 0.5 mile from the closest point along Sloan Canyon Road; the southern site boundary is approximately two miles north of the intersection of Hasley Canyon Road and Romero Canyon Road.

The new high school would have the same capacity as the proposed project. The site is 114 acres (in Parcels 1 and 4 of Tract 47807) with a net 55 usable acres. The proposed project site is 198 acres with a 71.4 acre campus. The Alternative 4 site partially overlaps the current project site but is centered farther west.

The project on this alternative site would be similar to the proposed project: approximately 240,000 to 265,000 square feet of building area, including several classroom buildings, an administration building, a library, a performing arts center with up to an 500-seat capacity, a multipurpose room and kitchen, a physical education building including large and small gymnasiums and administrative offices, a 5,000-seat football/soccer stadium with a running track, tennis courts, basketball courts, baseball and softball fields, and other play fields. The buildings would be one or two stories high, and the stadium and other fields would be lighted for nighttime use. Broadcasting facilities, including possible cellular, television, and satellite transmission may also be provided. The campus would include onsite parking for students, staff, and visitors. School access options would be the same as the proposed project.

1. Executive Summary

1.5.5 Alternative 5 – Hasley-Sloan Alternative Site

The Hasley-Sloan Alternative Site is a 70-acre site at the northeast corner of Hasley Canyon Road and Sloan Canyon Road, about 1.5 miles south of the proposed project site. The Hasley-Sloan site is rugged terrain with hilly topography and steep canyons on the eastern portion. A north-south trending ridgeline is in the central portion of the site and Hasley Canyon Creek passes east-west through the southwest corner of the site. The relief across the property is about 180 feet, with elevations from about 1,300 feet above mean sea level (amsl) along Hasley Canyon Creek to 1,480 feet amsl. The site is undeveloped and used for grazing cattle and horses. The remnants of building pads for planned mobile homes are at the southern and northwest portions of the site. This alternative would involve improvement of Sloan Canyon Road to a two-lane paved road for about 0.9 mile from Hasley Canyon Road to Hillcrest Parkway.

Information in the environmental analysis of this alternative is based in part on a preliminary environmental screening of the Hasley-Sloan and Romero Canyon sites prepared by Padre Associates Inc. in August 2010.

1.5.6 Alternative 6 – Sterling Gateway Alternate Site

This alternative site is in the Valencia Gateway area, in an area also referred to as the Valencia Commerce Center. The potential high school site is a portion of the approved vesting tentative parcel map (VTPM) 060030 (Sterling Industrial project). The site is at the end of Witherspoon Parkway. Commerce Center Drive and Hasley Canyon Road are the nearest arterial roadways and provide access to State Route 126 (SR-126) and Interstate 5 (I-5), respectively. When this site was being considered the Valencia Commerce Center was anticipated to experience additional growth as the area builds out.

A traffic study for the school on this alternative site was approved by the Los Angeles County Department of Public Works in 2008. Los Angeles County Board of Supervisors approved the project which included the school site and approximately 1.3 million square feet of industrial park uses. On the 116.6-acre undeveloped property, there are approximately 75 net build-able acres, of which the school would be built on 50 acres and the industrial park on the remaining 25 acres are presumed to be developed consistent with the site's approved uses. The school development would expand the existing urban development to the east.

The Chiquita Canyon Landfill is about 2,000 feet south of the site separated by a ridge. The site is surrounded to the east by industrial and commercial uses; to the west by rural residential uses and undeveloped land; and to the north by undeveloped land. The proposed high school would be constructed with a capacity for 2,600 students, and with core facilities to accommodate 2,600 students. In order to provide a worst case analysis, this study presumes a 2,600 student enrolment.

1.6 ISSUES TO BE RESOLVED

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR contain issues to be resolved including the choice among alternatives and whether or how to mitigate significant impacts. With regard to the proposed project, the major issues to be resolved include decisions by the lead agency as to the following:

1. Whether this Draft EIR adequately describes the environmental impacts of the project.
2. Whether the benefits of the project override those environmental impacts which cannot be feasibly avoided or mitigated to a level of insignificance.
3. Whether the proposed land use changes are compatible with the character of the existing area.

1. Executive Summary

4. Whether the identified goals, policies, or mitigation measures should be adopted or modified.
5. Whether there are other mitigation measures that should be applied to the project besides the Mitigation Measures identified in the Draft EIR.
6. Whether there are any alternatives to the project that would substantially lessen any of the significant impacts of the proposed project and achieve most of the basic project objectives.
7. Whether to build a second public access route (Access Scenario 2).

1.7 AREAS OF CONTROVERSY

- Location of the school
- Need for a second public access route
- Designation and function of access routes
- Intrusion into rural neighborhoods
- Aesthetics
- Air quality
- Biological resources
- Geology and soils, landslides
- Hydrology and water quality
- Noise
- Traffic

1.8 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Table 1-4 summarizes the conclusions of the environmental analysis contained in this EIR. Impacts are identified as significant or less than significant and for all significant impacts mitigation measures are identified. The level of significance after incorporation of mitigation measures is also identified.



1. Executive Summary

This page intentionally left blank.

1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation			
Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.1 AESTHETICS			
5.1-1 The project would not affect any scenic vistas	Less than Significant	No mitigation measures are required.	Less than Significant
5.1-2 The project would not substantially damage scenic resources within a state scenic highway.	Less than Significant	No mitigation measures are required.	Less than Significant
5.1-3 The proposed project would substantially alter the existing visual character of the site and its surroundings.	Potentially Significant	AES-1 During construction, the construction contractor shall locate construction staging areas and store cut-and-fill materials in areas with the least amount of visibility for residents surrounding the site.	Significant and Unavoidable
		AES-2 During construction, the construction contractor shall hydroseed or otherwise reestablish ground cover on the construction site through seeding and watering within 21 days after active operations have ceased. Plant material shall consist of native plant materials to prevent soil erosion and help preserve the existing landscape character.	
		AES-3 During project landscape design phase, the School District school facilities project manager or their designee shall draft landscape plans that clearly state: - Plantings adjacent to buildings and on engineered slopes shall be fully planted to minimize visual intrusion. Residential views if the buildings, slopes, and athletic fields shall be blocked with strategic placement of plants, trees, and other screening such as planted berms. Naturalized plantings of trees and shrubs shall be planted to break up the steep graded slopes. Additional plantings shall be used along existing residential site lines. - Plantings shall exceed the applicable minimum County Fire Department standards for plantings. - Removal of vegetation for building construction shall be minimized to the extent possible, consistent with project needs and fire protection needs. Where feasible, an organic pattern of vegetation removal will be used; removal will be conducted selectively to create irregular/naturalistic edges that are feathered rather than hard or straight edged (e.g., squared	

1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation			
Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.1-4 The project would create a new source of substantial light that would adversely affect nighttime views in the area.		AES-4 openings in the clearings). During architectural planning phase, the School District school facilities project manager or their designee shall design the buildings to be compatible with and respectful of the natural setting. Building materials, detailing, and colors shall be selected for their ability to enhance the visual character, complement the local surroundings and satisfy the desires of the District and local community.	
		AES-5 During grading plan design phase, the School District school facilities project manager or their designee shall minimize cut-and-fill slopes to the extent feasible to reduce the visibility of such features and promote the blending of earthwork with the surrounding natural environment. Gradual grade transitions (slope rounding) at hinge and catch points on earthwork slopes and flatter slopes shall be shown on grading plans where feasible. Grading plans shall preserve the existing grade around the base of trees that are to remain so their roots are not affected by earthwork. All provisions of this mitigation measure are subject to approval by the Division of the State Architect.	
		AES-6 During the design phase, the School District school facilities project manager or their designee shall minimize the use of retaining walls to the extent possible. Where retaining walls are required, they shall be constructed with natural-looking wall treatments and colors to reduce the visibility of the wall surface and blend it with the surrounding natural environment. These walls shall have low-sheen and nonreflective surface materials to reduce glare. All finishes shall be matte and roughened; use of smooth, trowelled surfaces and glossy paint shall be avoided. All provisions of this mitigation measure are subject to approval by the Division of the State Architect.	
		AES-7: The School District or its designee shall schedule evening events based on their typical duration such that they will end by 10 pm. This will allow the lighting levels for competitive sporting events (50 fc) to be extinguished by 10 pm. Reduced field lighting levels may remain on to allow spectators to exit the campus safely.	
		AES-8: Prior to start of project construction, the School District school facilities project manager or their designee shall develop a lighting plan to limit light spillover to no greater than 0.5 fc at property lines where adjoining light-sensitive land uses.	
	Potentially Significant		Significant and Unavoidable

1. Executive Summary

Table 1-4

Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		This plan will specify shielding of luminaires, directional control of field and parking lot lights, optimized heights for sports field lights, establishing appropriate field light settings based on the needs of the use (e.g., maximum output (50 fc) for sporting events, lower lighting levels for non-competitive events). AES-9: During architecture design, the School District school facilities project manager or their designee shall incorporate the use of non-reflective glass in all buildings.	
5.2 AIR QUALITY			
5.2-1 Construction activities would generate short-term emissions that exceed thresholds for VOC, NO _x , PM ₁₀ , and PM _{2.5} and would cumulatively contribute to the nonattainment designations.	Potentially Significant	AQ-1: Prior to award of construction contract, School District school facilities project manager or their designee shall include all mitigation measures in the construction bid documents. - All demolition and grading plans shall clearly show the requirement for United States Environmental Protection Agency Tier 3 or higher emissions standards for construction equipment over 50 horsepower. AQ-2: During project construction, the construction contractor shall use construction equipment rated by the United States Environmental Protection Agency as having Tier 3 or higher exhaust emission limits for equipment over 50 horsepower will operate for five or more days (40 hours). - A list of construction equipment by type and model year shall be maintained by the construction contractor onsite. - A copy of each unit's certified Tier specification shall be provided at the time of mobilization of each applicable unit of equipment. - All construction equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations. - All nonessential idling of construction equipment shall be restricted to five minutes or less in compliance with California Air Resources Board's Rule 2449.	Significant and Unavoidable

1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation			
Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		AQ-3: Prior to start of grading, the construction contractor shall prepare a dust control plan that includes all mitigation measures and South Coast Air Quality Management District Rule 403. The plan shall include the following measures: - Nontoxic soil stabilizers/dust suppressants shall be applied to all unpaved roads at the beginning of grading and reapplied a minimum of once per year, during construction activities until roads are paved. Nontoxic soil stabilizers/dust suppressants shall be reapplied more often if necessary to reduce dust. - Reestablish ground cover on the construction site through seeding and watering within 21 days after active operations have ceased. - Sweep streets with Rule 1186-compliant, PM10-efficient vacuum units on a daily basis if silt is carried to adjacent paved public thoroughfares or occurs as a result of hauling. - Maintain a minimum 24-inch freeboard on haul trucks that carry sand, soil, or other loose materials. - Loose materials shall be securely covered on all haul trucks. - Water exposed ground surfaces and disturbed areas on the construction site a minimum of every three hours or a minimum of three times per day. Recycled water should be used, if available. - Stabilize stockpiled materials. Stockpiles within 300 feet of occupied buildings shall not exceed eight feet in height, must have a road bladed to the top to allow water truck access, or must have an operational water irrigation system that is capable of complete stockpile coverage. - Limit onsite vehicle speeds on unpaved roads to no more than 15 miles per hour.	
		AQ-4: During application of interior and exterior architectural coatings, the construction contractor shall only use paint with a volatile organic compound (VOC) content of 200 or less (water based or low-VOC paint) to minimize VOC emissions from painting.	

1. Executive Summary

Table 1-4
Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.2-2 Long-term operation would not generate emissions that exceed thresholds and therefore would not cumulatively contribute to the nonattainment designations.	Less than Significant	No mitigation measures are required.	Less than Significant
5.2-3 Construction of the proposed project could expose sensitive receptors to substantial pollutant concentrations of NO _x , PM ₁₀ , and PM _{2.5} .	Potentially Significant	Implementation of Mitigation Measures AQ-1 through AQ-4.	Significant and Unavoidable
5.2-4 Project operation would not expose offsite sensitive receptors to substantial concentrations of air pollutants.	Less than Significant	No mitigation measures are required.	Less than Significant
5.2-5 The proposed project would not conflict with implementation of the applicable air quality management plan.	Less than Significant	No mitigation measures are required.	Less than Significant
5.3 BIOLOGICAL RESOURCES			
5.3-1 Development of the proposed project would impact the following sensitive species: slender mariposa lily (<i>Calochortus clavatus</i> var. <i>gracilis</i>) and Peirson's morning glory (<i>Calystegia piersonii</i>).	Significant	BIO-1: If the District chooses to develop the access roads under Option A, before the beginning of clearing operations on the alignments of Mandolin Canyon Road or Harp Canyon Road, the District shall have a qualified biologist collect bulbs from slender mariposa lily. The bulbs shall be planted in coastal sage scrub habitat preserved and restored or enhanced pursuant to Mitigation Measure BIO-7. BIO-2: Prior to construction, a survey for burrowing owls shall be conducted by a qualified biologist within the breeding season prior to ground disturbance, which extends from February 1 to August 31. Burrowing owl surveys shall be conducted following the California Department of Fish and Game (CDFG) Staff Report on Burrowing Owl Mitigation (March 7, 2012). Should burrowing owls be found on site during the pre-construction survey, they should be relocated and	Less than Significant

1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation			
Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.3-2 Project development would involve removal of 30 oak trees from the project site and up to 140 oak trees from the roadway alignments.	Significant	mitigated in accordance with the CDFG staff report. Consultation with CDFG should occur for concurrence prior to implementing any relocation measures, to ensure no potential "take" of burrowing owls. BIO-3: The District's school facilities project manager or their designee and the project landscape contractor, under the supervision of the project biologist, shall replace oak trees removed by the project at a minimum of 2 to 1 ratio. All coast live oaks removed shall be replaced with oak trees of the same species. All replacements shall be completed within one year after the beginning of site clearing.	Less than Significant
5.3-3 Development of the proposed project would result in the loss of up to 3.98 acres of coast live oak woodland, a sensitive plant community, in roadway alignments.	Significant	Implementation of Mitigation Measure BIO-3 BIO-4: During construction, the District's school facilities project manager or their designee and the project landscape contractor, under the supervision of the project biologist, shall plant and monitor replacement trees for any native trees removed or damaged during construction operations. All initial plantings of replacement trees shall be completed by one year after the start of construction. Any native trees, with the exception of oaks, that are removed or damaged shall be replaced in kind at a 5:1 ratio. Replacement trees shall be one gallon container size. Minimum separations for plantings of the same species shall be 8 feet for arroyo willow (<i>Salix lasiolepis</i>), black willow (<i>Salix goodingii</i>), sandbar willow (<i>Salix exigua</i>), red willow (<i>Salix laevigata</i>); 20 feet for sycamore (<i>Platanus racemosa</i>), California laurel (<i>Umbellularia californica</i>), black walnut (<i>Juglans californica</i>), cottonwood (<i>Populus sp.</i>), coast live oak (<i>Quercus agrifolia</i>), canyon oak (<i>Quercus chrysolepis</i>), and scrub oak (<i>Quercus berberidifolia</i>); and 15 feet for white alder (<i>Alnus rhombifolia</i>) based on recommendations by the restoration biologist. Plantings shall have a minimum of 80 percent survival, by species, the first year and 100 percent survival thereafter, and/or shall attain 75 percent cover after three years. The plantings shall maintain 90 percent cover after five years for the life of the project. The area shall be weeded and maintained clear of trash for the entire restoration period. No single species shall constitute more than 50 percent of the vegetative cover. Replacement trees should reach the following minimum growth at the	Less than Significant

1. Executive Summary

Table 1-4

Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.3-4 The proposed project would impact up to approximately 0.96 acres of Waters of the US and 2.644 acres of Waters of the State.	Significant	BIO-5: During construction, the District's school facilities project manager or their designee and the project landscape contractor, under the supervision of the project biologist, shall enhance the proposed drainage channel and swale to be built near the northeast and east site boundaries with 1.0 acre of soft unvegetated bottom channel and 1.0 acre of oak/elderberry/coastal sage scrub habitat. Planting of container plants and seeding via hydroseeding shall be used for creation of habitats. • Weed abatement measures shall begin in October and continue through February 28 to take advantage of the winter rainy season and to avoid the migratory bird nesting season. Removing weeds, either with herbicide or mowing, following germination and before seed-set, will reduce the amount of seed added to the seed bank in the soil. Vegetation shall be installed following weed abatement and after the first wetting rains between October 1 and March 1 to take advantage of winter rainy season, dormancy of foliage, and rooting period to ensure optimum survival of plantings. Restoration and enhancement efforts shall commence within one year of the start of construction. • Seeds collected from Los Angeles County within the watershed, if possible, but no more than 30 miles of the project site, shall be supplied by a qualified commercial seed collector/supplier with experience in native seed collections. • All riparian scrub container plants shall be one gallon size. The riparian scrub container plant palette shall consist of a mix of the following species: mule fat, sandbar willow, black willow, red willow, arroyo willow, blue elderberry, and coyote bush. The coastal sage scrub container plant palette shall consist of a mixture of chamise, California sagebrush, and toyon. The oak woodland plantings shall consist of coast live oak, scrub oak, and canyon live oak. • At the discretion of the restoration biologist, the riparian scrub seed mix shall consist of the following species: common yarrow (<i>Achillea</i>)	Less than Significant

1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation			
Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<i>millefolium</i>), California brome (<i>Bromus carinatus</i>), Chinese houses (<i>Collinsia heterophylla</i>), California poppy (<i>Eschscholzia californica</i>), meadow barley (<i>Hordeum brachyantherum</i>), giant wildrye (<i>Leymus condensatus</i>), deerweed (<i>Lotus scoparius</i>), California melicgrass (<i>Melica californica</i>), small-flowered melicgrass (<i>Melica imperfecta</i>), deergrass (<i>Mehlenbergia rigens</i>), purple needlegrass (<i>Nassella pulchra</i>), California beeplant (<i>Scrophularia californica</i>), and blue-eyed grass (<i>Sisyrinchium bellum</i>). At the discretion of the restoration biologist, the coastal sage scrub seed mix shall consist of the following species: chamise, California sagebrush, summer holly (<i>Comarostaphylis diversifolia</i>), California buckwheat, golden yarrow (<i>Eriophyllum confertiflorum</i>), California poppy, toyon, goldfields (<i>Lasthenia glabrata</i>), deerweed, arroyo lupine (<i>Lupinus succulentus</i>), white sage (<i>Salvia apiana</i>), blue-eyed grass, small fescue (<i>Vulpia microstachys</i>), and mission manzanita (<i>Xylococcus bicolor</i>).	
		BIO-6: The District's school facilities project manager or their designee, the project construction contractor, and the project landscape contractor, all under the supervision of the project biologist, shall create at least 1.0 acre of stream channel and restore riparian scrub vegetation along the channel in the northwest corner of the property outside of the project grading footprint. The timing and methods of weed abatement and planting, and the plant palettes for container and hydroseeded riparian scrub plants, shall be the same as those specified in Mitigation Measure BIO-5. All planting shall be completed within one year after the start of site clearing.	
		BIO-7: The District's school facilities project manager or their designee, the project landscape contractor, and the project biologist shall preserve and restore or enhance the specified acreages of the following vegetation types in the northwest corner of the property outside of the project grading footprint. The timing and methods of weed abatement and planting, and the plant palettes for container and hydroseeded riparian scrub plants, shall be the same as those specified in Mitigation Measure BIO-5. All planting shall be completed within one year after the start of site clearing.	

1. Executive Summary

Table 1-4

Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		• 1.0 acre of coast live oak woodland • 1.0 acre of chaparral containing chamise as a principal species • 2.97 acres of coastal sage scrub BIO-8: Prior to the beginning of project construction, the project civil engineer shall plan and install measures to minimize turbidity/siltation. This may require that the work site be isolated and that stormwater be diverted around the work area by means of a barrier, temporary culvert, new channel, or other means approved by CDFG. Precautions may also include placement of silt fencing, sand bags, and/or the construction of silt catchment basins, so that silt or other harmful materials are not allowed to pass to downstream reaches. The method used to prevent siltation shall be monitored by the project biologist and cleaned/repared weekly by the operator. The placement of any structure or materials in the stream for this purpose, not included in the original project description or CDFG-approved water pollution/water diversion plan shall be coordinated with CDFG. Erosion control measures may include sandbags, silt fencing, slope breakers, trenches, or dissipaters. Erosion control measures shall not contain materials such as hay bales or non-rice straw mulch, etc., that may contaminate the site. These measures preclude the introduction of exotic weedy species into the seed bank of areas with native vegetation. Preparation shall be made so that runoff from steep, erodible surfaces will be diverted into stable areas with little erosion potential. Frequent water checks shall be placed on dirt roads, cat tracks, or other work trails to control erosion. Areas of disturbed soils with slopes toward a stream or lake shall be stabilized to reduce erosion potential. Planting, seeding, and mulching is conditionally acceptable. Where suitable vegetation cannot reasonably be expected to become established, non-erodible materials, such as coconut fiber matting, shall be used for such stabilization. Any installation of non-erodible materials not described in the original project description shall be coordinated with the CDFG. The project construction contractor shall construct an effective water velocity dissipation device at any outlet structures to minimize erosion. Rock, rip-rap, or other erosion protection shall be placed in areas where vegetation cannot reasonably be expected to become reestablished. This condition shall be	

1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation			
Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.3-5 The proposed project would affect wildlife movement.	Significant	approved by the CDFG prior to project commencement. Drainage and sedimentation control devices shall be routinely cleaned, maintained, and repaired prior to and during the rainy season. Control devices shall be inspected at least monthly. In addition to the monthly inspection, control devices shall be inspected within 24 hours of a significant rain event (0.5 inch of rainfall or greater). All repairs to these systems shall be immediately executed to minimize erosion problems.	
		BIO -9: Prior to any construction during the raptor nesting season, January 31 to September 1, a qualified biologist shall conduct a site survey for active nests two weeks prior to any scheduled clearing, grading, or construction activities. If an active nest is located, then no construction work shall be conducted within a 500-foot radius from the nest until the young have fledged and are independent of the adults. The biologist shall direct placement of a fence to create a minimum 500-foot-radius avoidance area. BIO -10: Prior to any vegetation disturbance between March 1 and September 15, a qualified biologist shall conduct a survey for nesting birds in all breeding/nesting habitat within the project site and adjacent to the project site within 300 feet of disturbance areas. Nesting bird surveys shall be conducted no earlier than 30 days prior to initiation of ground or vegetation disturbance by the project. If no breeding/nesting birds are observed and concurrence has been received from CDFG, site preparation and construction activities may begin. If breeding activities and/or an active bird nest is located and concurrence has been received from CDFG, the breeding habitat/nest site shall be fenced by the biological monitor a minimum of 300 feet (500 feet for raptors) in all directions, and this area shall not be disturbed until the nest becomes inactive; the young have fledged, the young are no longer being fed by the parents, the young have left the area, and the young will no longer be impacted by the project. If the qualified biologist determines that narrower buffer between the construction activities and the observed active nests is warranted, the biologist may submit a written explanation as to why (e.g., species-specific information; ambient conditions and bird's habituation to them; and terrain, vegetation, and birds' lines of sight between the construction activities and the nest and foraging	Less than Significant

1. Executive Summary

Table 1-4

Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		areas) to the District and, upon request, CDFG. Based on the submitted information, the District, acting as the lead agency (and CDFG, if CDFG requests) will determine whether to allow a narrower buffer. If any threatened or endangered avian species are observed on the project site, no work shall occur during the breeding season (March 1 and September 15) to avoid direct or indirect (noise) take of listed species. If any formally state or federal listed animal or plant species are observed on the property, then State and/or Federal threatened/endangered species permits may be required prior to commencing project activities.	

5.4 CULTURAL RESOURCES

	Potentially Significant		Less than Significant
5.4-1 Project development would not substantially change the significance of a historical resource.		CUL-1: Prior to the initiation of project-related earthmoving activities and excavation, the School District school facilities project manager or their designee shall retain a County-certified qualified archaeologist. The qualified archaeologist shall meet the Secretary of the Interior's Professional Qualifications Standards (48 Federal Register 44738-39). The archaeologist must have knowledge of both prehistoric and historical archaeology. CUL-2: Prior to the initiation of project-related earthmoving activities and excavation, a cultural resource monitoring plan shall be prepared by a qualified archeologist. The cultural resource monitoring plan shall outline when and for how long monitoring shall occur, where on the site monitoring of vegetation clearing and earthmoving activities shall be required, methods of monitoring, types of artifacts anticipated, procedures for temporary stop and redirection of work to permit sampling, identification and evaluation of possible resources, procedures for additional analysis, and accommodation and procedures for Native American monitors, if any. CUL-3: Prior to the start of ground disturbing activities on the project site, the School District school facilities project manager or their designee shall ensure that a qualified archaeologist or another mitigation program staff member has conducted cultural resources sensitivity training for all construction workers involved in moving soil or working near soil disturbance.	

1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation			
Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		- Construction personnel, including heavy-equipment operators, shall be briefed on procedures to be followed in the event that cultural remains are encountered by earthmoving activities, particularly if archaeological construction monitors are not on site. - Pre-construction training shall include: - Review the types of archaeological resources that might be found - Review of laws and applicable requirements concerning the protection of cultural resources. - Prehistoric or historic cultural resource discovery procedures - The briefing shall be presented to new contractor personnel as necessary. - Names and telephone numbers of the monitor and other mitigation program personnel shall be provided to appropriate construction personnel.	
		CUL-4: During project-related earthmoving activities and excavation, the construction manager shall adhere to the stipulations of the cultural resource monitoring plan. The archaeologist shall have the authority to halt any project-related activities adversely impacting potentially significant resources.	
		CUL-5: During project-related earthmoving activities and excavation, if cultural resources are uncovered they shall be recovered and analyzed in accordance with CEQA guidelines. A qualified archaeologist shall assess the find(s) and determine if they are of value. If the find(s) are of value then: - Suspension of ground disturbances within a 30-foot radius of the discovery shall not be lifted until the archaeological monitor has evaluated the find to assess whether they are classified as historical resources or unique archaeological sites, pursuant to CEQA. - The construction contractor shall prepare all potential finds in excavated material to the point of identification. - Significant archaeological resources found shall be preserved as determined necessary by the archaeologist.	

1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation			
Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		- Excavated finds shall be curated at either the Los Angeles County Natural History Museum or its designee on a first-refusal basis. After which finds shall be offered to a local museum or repository willing to accept the resource. - Within 30 days of completion of the end of earth moving activities, the archeologist shall draft report summarizing the finds, and shall include the inspection period, an analysis of any resources found, and identification of the repository. - Any resulting reports shall be filed with the School District or their designee and with the South Central Coastal Information Center at the California State University, Fullerton.	
5.4-2 Development of project roadways would not impact an archaeological site identified in the project site.	Less than Significant	No mitigation measures are required.	Less than Significant
5.4-3 Project grading and construction activities could damage previously undiscovered buried archaeological resources.	Potentially Significant	CUL-6: Prior to the start of any ground disturbing activities on the project site Native American representatives from the Fernandeño Tataviam Band of Mission Indians (Tribe) shall be notified of the pending activities. The qualified archeologist shall coordinate with the Tribal representatives during the drafting of the archaeological monitoring plan. During ground disturbing activities, if there is any evidence of Native American resources (significant or otherwise), action shall be taken in accordance with the archaeological monitoring plan and Mitigation Measures CUL-1 through CUL-5.	Less than Significant
5.4-4 Project development could destroy unique paleontological resources.	Potentially Significant	CUL-7: Prior to the initiation of project-related earthmoving activities and excavation, the School District school facilities project manager or their designee shall retain a qualified paleontologist approved by Los Angeles County and the Natural History Museum of Los Angeles County Vertebrate Paleontology Section. CUL-8: Prior to the initiation of project-related earthmoving activities and excavation, a cultural resource monitoring plan shall be prepared by a qualified paleontologist. The cultural resource monitoring plan shall outline when and for how long monitoring shall occur, where on the site and at what depths monitoring of earthmoving activities shall be required, methods of monitoring, types of	Less than Significant

1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation			
Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		artifacts anticipated, procedures for temporary stop and redirection of work to permit sampling, identification and evaluation of possible resources, procedures for additional analysis. CUL-9: Prior to the initiation of project-related earthmoving activities and excavation, the School District school facilities project manager or their designee shall ensure that a qualified paleontologist or other mitigation program staff member has conducted paleontological resources sensitivity training for all construction workers involved in moving soil or working near soil disturbance. - Construction personnel, including heavy-equipment operators, shall be briefed on procedures to be followed in the event that cultural remains are encountered by earthmoving activities, particularly if paleontological construction monitors are not on site. - Pre-construction training shall include: - Review the types of paleontological resources that might be found - Review of laws and applicable requirements concerning the protection of fossil resources. - Paleontological resource discovery procedures - The briefing shall be presented to new contractor personnel as necessary. - Names and telephone numbers of the monitor and other mitigation program personnel shall be provided to appropriate construction personnel. CUL-10: During project-related earthmoving activities and excavation, a qualified paleontologist shall monitor ground-disturbing activities in accordance with the cultural resource monitoring plan. - Monitoring shall consist of visually inspecting debris piles and freshly exposed strata to allow for the discovery and recovery of larger fossil remains, and periodically dry test screening rock, sediment, and debris to inspect smaller fossil remains. As soon as practicable, the monitor shall recover all larger vertebrate fossil remains, a representative sample of invertebrate or plant fossil specimens, or any fossiliferous rock or sediment sample that can be recovered easily. If recovery of a large or unusually productive fossil occurrence is warranted, earthmoving activities	

1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation			
Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		shall be diverted temporarily around the fossil site and a recovery crew shall be mobilized as necessary to remove the occurrence as quickly as possible. If not on site when a fossil occurrence is uncovered by such activities, the activities shall be diverted temporarily around the fossil site and the monitor called to the site to evaluate and, if warranted, recover the occurrence. If the paleontologist or monitor determines that the fossil site is too unproductive or the fossil remains not worthy of recovery by the monitor, no further action will be taken to preserve the fossil site or remains, and earthmoving activities shall be allowed to proceed through the site immediately. The location and proper geologic context of any recovered fossil occurrence or rock or sediment sample shall be documented. CUL-11: During or after project-related earthmoving activities and excavation, all fossil specimens recovered from the area as a result of mitigation, including those from processing rock or sediment samples, will be treated (i.e., prepared, identified, curated, catalogued) in accordance with designated museum repository requirements. Rock or sediment samples shall be submitted to commercial laboratories for microfossil, pollen, radiometric dating, or other analysis, as appropriate. CUL-12: During project-related earthmoving activities and excavation, the monitor shall maintain daily monitoring logs that include the particular tasks accomplished, the earthmoving activity monitored, the location where monitoring was conducted, the rock unit(s) encountered, the fossil specimens recovered, and associated specimen data and corresponding geologic and geographic site data. CUL-13: Within 30 days of completion of the end of earth moving activities, a final technical report of results and findings shall be prepared by the paleontologist in accordance with any County requirement and the cultural resource monitoring plan. Any resulting reports shall be filed with the School District or their designee and the museum repository.	

1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation			
Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.4-5 Project development would not destroy unique geological resources.	Less than Significant	No mitigation measures are required.	Less than Significant
5.5 GEOLOGY AND SOILS			
5.5-1 Project site is not near known active faults.	Less than Significant	No mitigation measures are required.	Less than Significant
5.5-2 Project would not expose people or structures to strong ground shaking.	Less than Significant	No mitigation measures are required.	Less than Significant
5.5-3 Project would involve construction of school buildings on a site subject to liquefaction and lateral spreading.	Potentially Significant	GEO-1: All earthwork and project design shall be performed in compliance with building and safety standards of the District, the California Department of Education, Division of the State Architect, and the state building code. GEO-2: Prior to start of any earthwork, the District's project geotechnical engineer or engineering geologist shall document all test findings and engineering conclusions in a signed and date-stamped report. GEO-3: Prior to start of any earthwork, the District's project engineer or engineering geologist shall test soil density using a standard penetration test or other method approved by the project geotechnical engineer or engineering geologist, at the site of boring RSA 122 in the northeastern part of the project site. The project geotechnical engineer or engineering geologist shall provide recommendations for minimizing hazards related to seismic settlement near the site of boring 122. Compliance with all recommendations of the project geotechnical engineer or engineering geologist is required. GEO-4: Prior to start of any earthwork, the District's grading contractor shall remove existing soils to a depth of 20 feet over and around the site of boring GWV16 in the south part of the project site. The radius of soil removal shall be determined by the project geotechnical engineer or engineering geologist. The removal bottom – that is, soil remaining after soil removal – near boring GWV16 shall be thoroughly inspected by the geotechnical engineer or engineering geologist before placement of fill soil begins.	Less than Significant

1. Executive Summary

Table 1-4

Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.5-4 The project would involve the construction of school buildings on a site subject to landslides.	Potentially Significant	Mitigation Measures GEO-1 and GEO-2 apply. GEO-5 Prior to start of any earthwork, the District's project geotechnical engineer or engineering geologist shall conduct subsurface soil testing in landslide areas in parcels 2 and 3 of the project site. The geotechnical engineer or engineering geologist shall document site-specific performance standards for landslide removals, remedial grading, and landslide burials to stabilize and remove landslides. The geotechnical engineer or engineering geologist shall document that the soils will support the improvements planned. In the event that soils in landslide areas in Parcels 2 and 3 cannot be remediated to adequately support planned improvements in those areas, the geotechnical engineer or engineering geologist shall recommend areas where the building of structures or other improvements should be avoided.	Less than Significant
5.5-5 Project would not result in substantial soil erosion.	Less than Significant	Not mitigation measures are required.	Less than Significant
5.5-6 Project may result in substantial hazards from soil subsidence, collapsible soils, or corrosive soils.	Potentially Significant	Implementation of Mitigation Measures GEO-1 and GEO-2 GEO-6 The District's project geotechnical engineer or engineering geologist shall ensure relative compaction of at least 93 percent for fills over 40 feet deep. Lower portions of fills shall be constructed using granular materials to reduce settlement of the fill. Fills over 50 feet deep shall be monitored using methods specified in the geotechnical investigation. The monitoring shall be conducted during excavation and placement of fill, and for a year after placement of engineered fills. GEO-7 Prior to start of any earthwork, the District's project geotechnical engineer or engineering geologist shall conduct additional subsurface soil sampling in parcels 2 and 3 of the project site to document susceptibility of soils to hydrocollapse, and shall conduct resistivity, pH, sulfate, and chloride tests to determine the potential of the soils to corrode concrete. The geotechnical engineer or engineering geologist shall document site-specific performance standards for removal of existing alluvium to reduce hazards from hydrocollapse and corrosivity. The geotechnical engineer or engineering geologist shall	Less than Significant

1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation			
Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.5-7 Project may result in substantial hazards from expansive soils.	Potentially Significant	document that the soils will support the improvements planned after removal of existing alluvium, and placement of engineered fill soils, to the specified standards. Implementation of Mitigation Measures GEO-1 and GEO-2 GEO-8 Prior to start of any earthwork, the District's project geotechnical engineer or engineering geologist shall conduct subsurface soil testing in Parcels 2 and 3 of the project site for expansion potential. The geotechnical engineer or engineering geologist shall document that the soils on finished pad grades will support the improvements planned.	Less than Significant
5.6 GREENHOUSE GAS EMISSIONS			
5.6-1 The proposed project would not generate GHG emissions that would exceed the significance criteria.	Less than Significant	No mitigation measures are required.	Less than Significant
5.6-2 The proposed project would not conflict with plans adopted for the purpose of reducing greenhouse gas emissions.	Less than Significant	No mitigation measures are required.	Less than Significant
5.7 HAZARDS AND HAZARDOUS MATERIALS			
5.7-1 The project would not result in a foreseeable upset or accident condition involving the release of hazardous materials into the environment.	Less than Significant	No mitigation measures are required.	Less than Significant
5.7-2 The project would not be near a water or fuel storage tank or a pipeline that can pose a safety hazard.	Less than Significant	No mitigation measures are required.	Less than Significant

1. Executive Summary

Table 1-4

Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.7-3 The project includes a helipad but would not create substantial safety hazard for people residing or working in the area.	Less than Significant	No mitigation measures are required.	Less than Significant
5.7-4 The project would not interfere with an adopted emergency response or evacuation plan.	Less than Significant	No mitigation measures are required.	Less than Significant
5.7-5 The project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.	Less than Significant	No mitigation measures are required.	Less than Significant
5.8 HYDROLOGY AND WATER QUALITY			
5.8-1 The proposed project would not violate any water quality standards or waste discharge requirements or otherwise degrade water quality.	Less than Significant	No mitigation measures are required.	Less than Significant
5.8-2 The proposed project would not adversely impact groundwater quality, substantially deplete groundwater supplies, or interfere substantially with groundwater recharge.	Less than Significant	No mitigation measures are required.	Less than Significant
5.8-3 While the project would change the drainage pattern of the site, the project would not result in substantial erosion or siltation on- or off-site.	Less than Significant	No mitigation measures are required.	Less than Significant

1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation			
Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.8-4 The proposed project would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site, or create runoff water that would exceed the capacities of existing or planned stormwater drainage systems	Less than Significant	No mitigation measures are required.	Less than Significant
5.8-5 The proposed project would not substantially degrade overall water quality.	Less than Significant	No mitigation measures are required.	Less than Significant
5.8-6 The project would not create flood hazards arising from potential failure of two planned 750,000-gallon water tanks to be developed near the western site boundary.	Less than Significant	No mitigation measures are required.	Less than Significant
5.8-7 The proposed project would not subject people or structures to substantial hazards from mudflow.	Less than Significant	No mitigation measures are required.	Less than Significant
5.9 LAND USE AND PLANNING			
5.9-1 Project implementation would not conflict with applicable plans adopted for the purpose of avoiding or mitigating an environmental effect.	Less than Significant	No mitigation measures are required.	Less than Significant
5.9-2 The proposed project would not conflict with any existing or proposed land uses.	Less than Significant	No mitigation measures are required.	Less than Significant

1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation			
Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.10 NOISE			
5.10-1 Project-related traffic would significantly increase noise along roadways.	Potentially Significant	No feasible mitigation measures are available.	Significant and Unavoidable
5.10-2 The ambient noise levels would meet the 45 dBA CNEL interior school noise standard.	Less than Significant	No mitigation measures are required.	Less than Significant
5.10-3 Stadium events would not exceed the County of Los Angeles exterior noise limits at residential uses.	Less than Significant	No mitigation measures are required.	Less than Significant
5.10-4 Long-term operation-related noise would not exceed local standards.	Less than Significant	No mitigation measures are required.	Less than Significant
5.10-5 The project would not create significant groundborne vibration and groundborne noise.	Less than Significant	No mitigation measures are required.	Less than Significant
5.10-6 Construction activities would result in significant temporary noise increases.	Potentially Significant	N-1 Prior to award of construction contract, the School District school facilities project manager or their designee shall include all construction-related mitigation measures in bid documents. N-2 Prior to start of grading on access roads, the School District school facilities project manager or their designee shall prepare a noise control plan that includes the following measures along with the Los Angeles County Noise Ordinance. The plan shall include the following measures: • All internal combustion engine-driven equipment shall have properly operating mufflers, air intake silencers, and engine shrouds that are appropriate for the equipment and that are no less effective than as originally equipped by the manufacturer. • Properly maintain and tune all construction equipment. • Locate all stationary noise sources (e.g., generators, compressors, staging	Significant and Unavoidable

1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation			
Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		- areas) as far from noise-sensitive receptors as is feasible. - If stationary, noise-generating equipment must be located near existing residential properties; then such equipment shall have temporary acoustical enclosures, blanketing, or barriers to reduce the noise emissions. - Use "quiet-design" air compressors and other stationary noise sources where such technology exists. - Reduce nonessential idling of construction equipment to no more than five minutes. - Designation of a member of the construction team who shall be responsible for responding to any complaints and questions about construction noise. A contact number shall be posted on the school district website.	
5.11 POPULATION AND HOUSING			
5.11-1 The proposed project would not result in substantial population growth in the project region.	Less than Significant	No mitigation measures are required.	Less than Significant
5.12 PUBLIC SERVICES			
FIRE PROTECTION AND EMERGENCY SERVICES			
5.12-1 The proposed project would not significantly impact fire protection services.	Less than Significant	No mitigation measures are required.	Less than Significant
POLICE PROTECTION			
5.12-2 The proposed project would not significantly impact police protection services.	Less than Significant	No mitigation measures are required.	Less than Significant

1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation			
Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
SCHOOL SERVICES			
5.12-3 The proposed project would not generate new students or impact existing schools.	Less than Significant	No mitigation measures are required.	Less than Significant
LIBRARY SERVICES			
5.12-4 The proposed project would not increase the service needs for local libraries.	Less than Significant	No mitigation measures are required.	Less than Significant
5.13 RECREATION			
5.13-1 The proposed project would not cause increased use of recreational facilities.	Less than Significant	No mitigation measures are required.	Less than Significant
5.13-2 The proposed project would not result in environmental impacts from new or expanded recreational facilities.	Less than Significant	No mitigation measures are required.	Less than Significant
5.14 TRANSPORTATION/TRAFFIC			
5.14-1 Project-generated traffic would result in unacceptable levels of service at several existing study area intersections.	Potentially Significant	T-1 If Scenario 1 is chosen for development of school access roads, at least six months before opening of the school, the District shall request approval of the Los Angeles County Department of Public Works for installation of the following improvements. Upon approval by the Los Angeles County Department of Public Works, the District would be responsible for the cost of all of the following improvements. - Sloan Canyon Road at Quail Valley Road - Stripe a second westbound through lane (to transition to a single westbound lane just west of the intersection) - Stripe a second eastbound through lane - Install a traffic signal	Significant and Unavoidable

1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation			
Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		- Parker Road at Southbound I-5 Ramp - Add an eastbound right-turn lane - Install a traffic signal - Ridge Route Road at Northbound I-5 Ramp - Install a traffic signal - The Old Road at Parker Road - Add a westbound left-turn lane - Add an eastbound left-turn lane - Install a traffic signal - Sloan Canyon Road at Parker Road - Stripe a northbound right-turn lane - Stripe a westbound left-turn lane - Stripe a shared westbound left turn/right turn lane - Install a traffic signal	
		T-2 Student enrollment at the campus shall not exceed 1,600 students unless the District has completed one of the following: 1) Widen the pavement and restripe the northern public access route to provide four lanes of travel (two lanes in each direction); or 2) Complete the southern public access route (Scenario 2); or 3) Make a finding that sufficient other roads in the area have been constructed by others and that these roads will provide adequate access and travel capacity to accommodate the ultimate school capacity of 2,600 students. This finding shall be made by the Governing Board at a public meeting based on an analysis of the available road network and traffic conditions at that time.	
		T-3 Student enrollment at the campus shall not exceed 1,600 students unless the District has implemented staggered start times, consisting of three start times with each of the times at least 30 minutes apart. At least 25 percent of the student enrollment shall participate in each of the three start times.	

1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation			
Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		T-4 If Scenario 2 is chosen for development of school access roads, at least six months before opening of the school, the District shall request approval of the Los Angeles County Department of Public Works for installation of a traffic signal and striping a northbound right-turn lane at the intersection of Sloan Canyon Road and Parker Road.	
5.14-2 Project-related trip generation in combination with existing and proposed cumulative development would not cause CMP highways to exceed county congestion management agency service standards.	Less than Significant Impact	No mitigation measures are required.	Less than Significant Impact
5.14-3 The project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections). The project would not introduce incompatible uses to area roadways, such as farm equipment.	Less than Significant Impact	No mitigation measures are required.	Less than Significant Impact
5.14-4 Traffic and pedestrian hazards would be mitigated per Caltrans's School Area Pedestrian Safety Manual.	Less than Significant Impact	No mitigation measures are required.	Less than Significant Impact
5.14-5 The project site would be easily accessible from proposed arterial roadways.	Less than Significant Impact	No mitigation measures are required.	Less than Significant Impact
5.14-6 The project would provide minimum peripheral visibility maintained for driveways per Caltrans's Highway Design Manual.	Less than Significant Impact	No mitigation measures are required.	Less than Significant Impact

1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation			
Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.14-7 The project would provide adequate emergency access.	Less than Significant	No mitigation measures are required.	Less than Significant Impact
5.14-8 The project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	Less than Significant	No mitigation measures are required.	Less than Significant Impact
5.14-9 Adequate parking would be provided for the proposed project.	Less than Significant	No mitigation measures are required.	Less than Significant Impact
5.15 UTILITIES AND SERVICE SYSTEMS			
5.15-1 The project includes construction of necessary new water service infrastructure but would not significantly impact water service or existing infrastructure.	Less than Significant	No mitigation measures are required.	Less than Significant
5.15-2 Project-generated wastewater could be adequately treated by existing and proposed infrastructure.	Less than Significant	No mitigation measures are required.	Less than Significant
5.15-3 Project-generated stormwater would be adequately handled by the proposed drainage and treatment system onsite.	Less than Significant	No mitigation measures are required.	Less than Significant

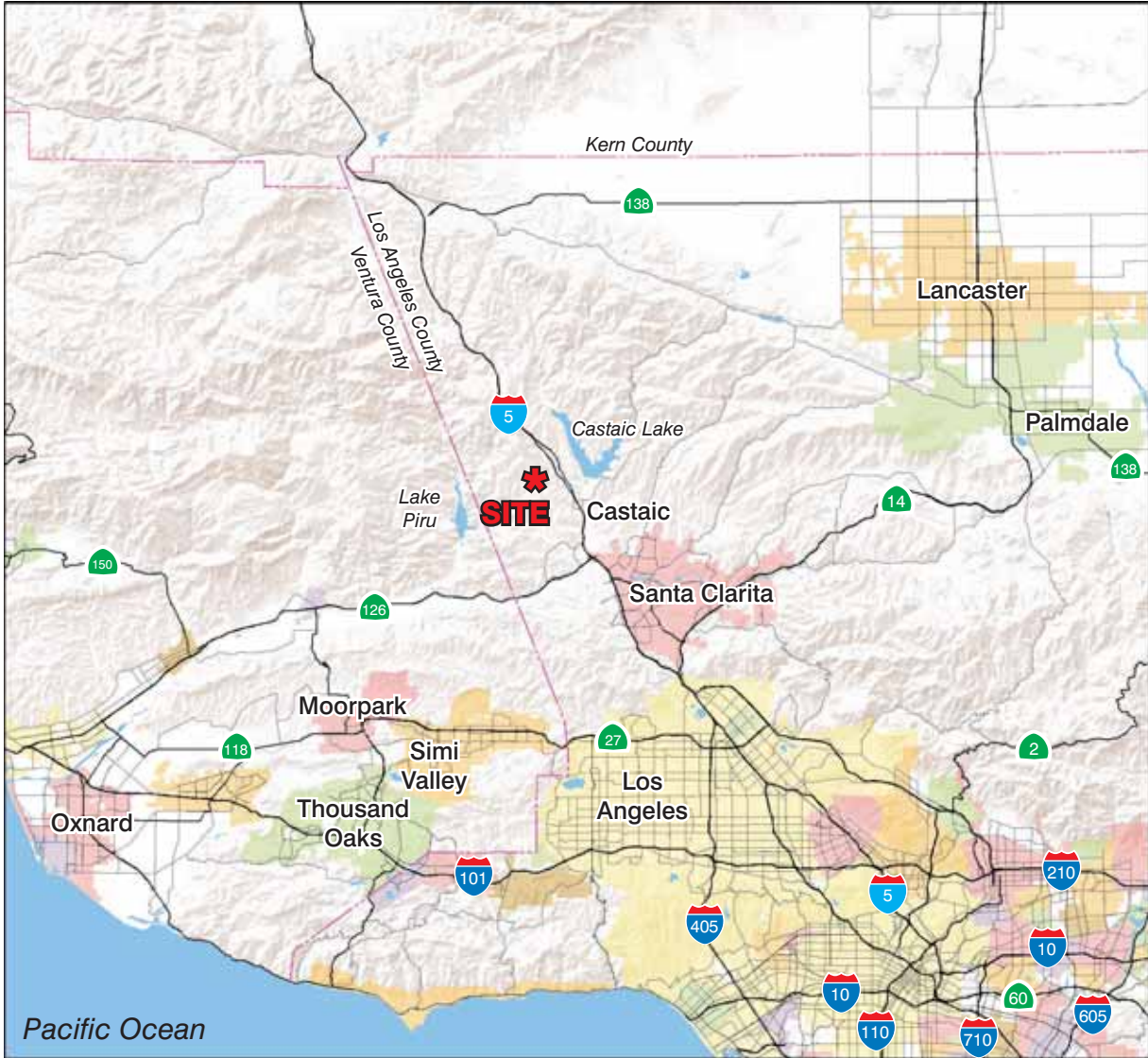
1. Executive Summary

Table 1-4 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation			
Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.15-4 Existing and proposed facilities would be able to accommodate project-generated solid waste and comply with related solid waste regulations.	Less than Significant	No mitigation measures are required.	Less than Significant
5.15-5 Existing facilities would be able to accommodate project-generated utility demands.	Less than Significant	No mitigation measures are required.	Less than Significant

1. Executive Summary

This page intentionally left blank

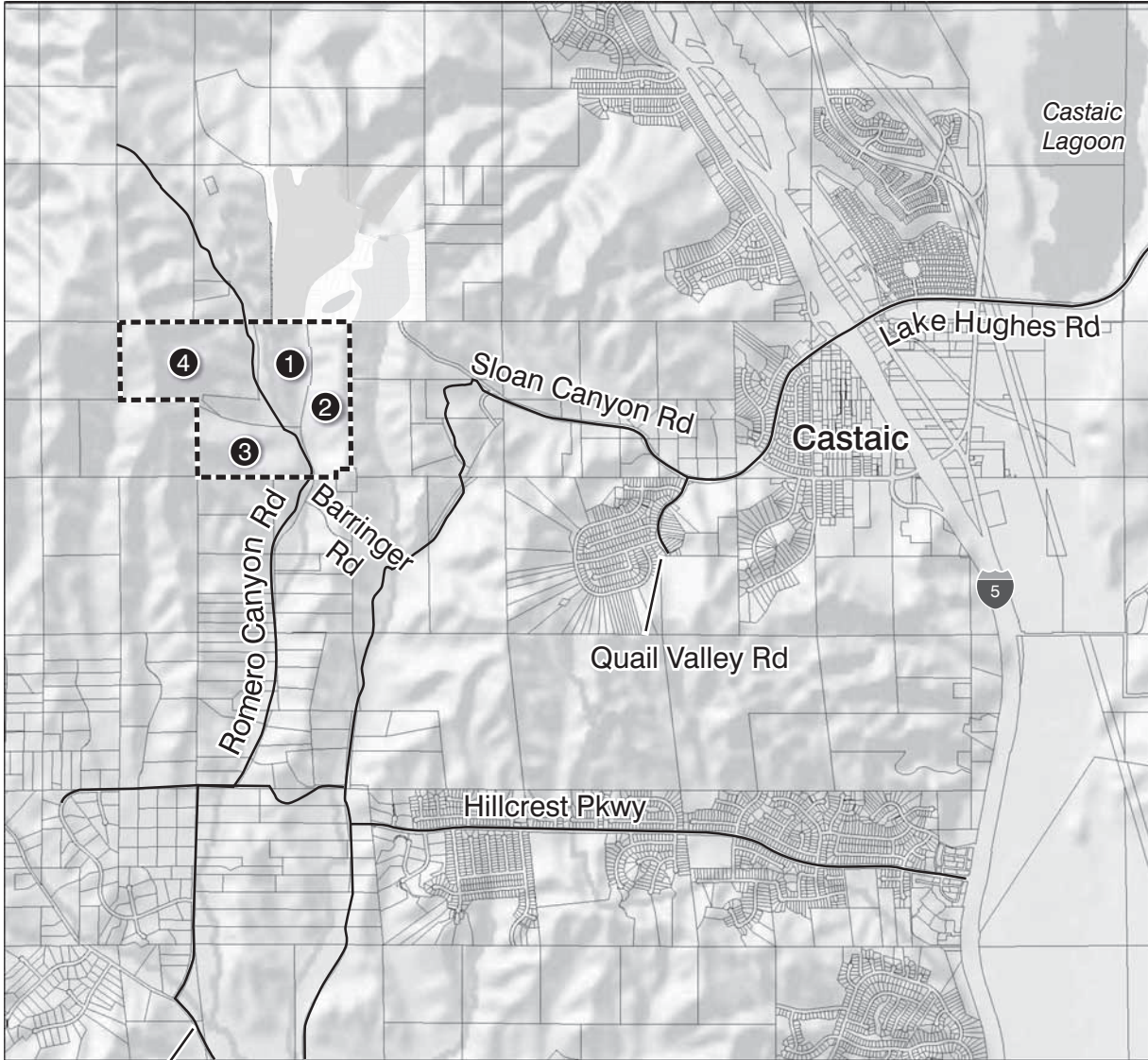
Regional Location



1. Executive Summary

This page intentionally left blank.

Local Vicinity



- Project Site (Tract 47807)
- ④ Parcel Numbers

0 3,000
Scale (Feet)



1. Executive Summary

This page intentionally left blank.

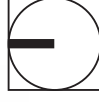
Conceptual Site Plan



--- Site Boundary

Source: Ruhnau Ruhnau Clarke 2012

Castaic High School Draft EIR



0 1,000
Scale (Feet)



1. Executive Summary

This page intentionally left blank.

2. Introduction

2.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The California Environmental Quality Act (CEQA) requires that all state and local governmental agencies consider the environmental consequences of projects over which they have discretionary authority prior to taking action on those projects. This Draft Environmental Impact Report (Draft EIR) has been prepared to satisfy CEQA, as set forth in the Public Resources Code Section 21000, et seq., and the State CEQA Guidelines, 14 California Code of Regulations, Section 15000, et seq. The Environmental Impact Report (EIR) is the public document designed to provide decision makers and the public with an analysis of the environmental effects of the proposed project, to indicate possible ways to reduce or avoid environmental damage and to identify alternatives to the project. The EIR must also disclose significant environmental impacts that cannot be avoided; growth inducing impacts; effects not found to be significant; and significant cumulative impacts of all past, present and reasonably foreseeable future projects.

Pursuant to CEQA Section 21067, the Lead Agency means “the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment.” The William S. Hart Union High School District (District) has the principal responsibility for approval of the Castaic High School project. For this reason, the District is the CEQA Lead Agency for this project.

The intent of the Draft EIR is to provide sufficient information on the potential environmental impacts of the proposed Castaic High School project to allow the District to make an informed decision regarding approval of the project. Specific discretionary actions to be reviewed by the District are described later in Section 3.4, *Intended Uses of the EIR*.

This Draft EIR has been prepared in accordance with requirements of the:

- California Environmental Quality Act (CEQA) of 1970, as amended (Public Resources Code Section 21000 et seq.)
- State Guidelines for the Implementation of the CEQA of 1970 (herein referenced as CEQA Guidelines), as amended (California Code of Regulations Sections 15000 et seq.)

The overall purpose of this Draft EIR is to inform the lead agency, responsible agencies, decision makers and the general public of the environmental effects of the development and operation of the proposed Castaic High School project. This Draft EIR addresses the potential environmental effects of the project, including effects that may be significant and adverse, evaluates a number of alternatives to the project, and identifies mitigation measures to reduce or avoid adverse effects.

2.2 NOTICE OF PREPARATION AND INITIAL STUDY

In 2011 a Notice of Preparation (NOP) was prepared and circulated for public review, from February 25, 2011, to March 28, 2011. A public scoping meeting was held on March 8, 2011, to obtain input from the public and interested agencies.



2. Introduction

Based on public comments the District elected to add additional access routes to the school and circulated an NOP and preliminary environmental assessment (Initial Study) that identified preliminary environmental impacts associated with the construction and operation of the school (October 12, 2011, to November 10, 2011). At that time the high school was planned on Tract 47807 parcels 1 and 4 (now referenced as Romero Canyon Alternative Site).

The District Board was informed at its regular meeting on November 16, 2011, that Tract 47807 parcels 2 and 3 had become available for purchase, as stated in a letter from the property owner dated October 2011. The District decided that this “hybrid site,” which would shift the school campus to the east and was on portions of all four parcels, might be less costly and have fewer environmental challenges than the original site. The project on this second site (proposed project) was refined and a third NOP and Initial Study were circulated from January 30, 2012, to February 28, 2012. The three NOPs and all comments received during the public review period are in Appendix A to this Draft EIR.

The NOP process is used to help determine the scope of the environmental issues to be addressed in the Draft EIR. The NOP process solicits the views of Responsible/Trustee agencies and other interested parties as to the scope and content of the environmental information, which are germane to each agency’s statutory responsibilities in connection with the proposed project. This Draft EIR analyzes all impact categories included in the CEQA checklist.

2.3 SCOPE OF THIS DRAFT EIR

The scope of the Draft EIR was determined based upon the District’s Initial Study, comments received in response to three NOPs, and comments received at the scoping meeting conducted by the District. Pursuant to Sections 15126.2 and 15126.4 of the State CEQA Guidelines, the Draft EIR should identify any potentially significant adverse impacts and recommend mitigation that would reduce or eliminate these impacts to levels of insignificance. In addition to general CEQA requirements, projects involving school site acquisition to be funded under the state School Facilities Program must also satisfy several specific requirements established in the California Education Code and California Code of Regulations. These requirements have been identified throughout Section 5, *Environmental Analysis* as an additional impact threshold.

The information contained in the *Project Description* establishes the basis for analyzing future project-related environmental impacts.

2.3.1 Impacts Considered Less Than Significant

This Draft EIR is considered a “full-scope” Draft EIR in which all environmental impact categories identified in the CEQA Guidelines Environmental Checklist Form are discussed in detail in this document. Therefore, no impacts were considered less than significant during the NOP process.

2.3.2 Potentially Significant Adverse Impacts

Seventeen environmental factors have been initially been identified as potentially significant impacts if the proposed project is implemented. These factors are:

- Aesthetics
- Agriculture and Forest Resources
- Air Quality
- Biological Resources
- Cultural Resources

2. Introduction

- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic
- Utilities and Service Systems

2.3.3 Unavoidable Significant Adverse Impacts

This Draft EIR identifies four significant and unavoidable adverse impacts, as defined by CEQA that would result from implementation of the proposed project. Unavoidable adverse impacts may be considered significant on a project-specific basis, cumulatively significant, and/or potentially significant. If the District, as the Lead Agency, determines that unavoidable significant adverse impacts will result from the project, the District must prepare a “Statement of Overriding Considerations” before it can approve the project. A Statement of Overriding Considerations states that the decision-making body has balanced the benefits of the proposed project against its unavoidable significant environmental effects and has determined that the benefits of the project outweigh the adverse effects and, therefore, the adverse effects are considered to be acceptable. The impacts that were found in the Draft EIR to be significant and unavoidable are:

- Aesthetics
- Air Quality
- Noise
- Transportation and Traffic

2.4 INCORPORATION

Because of the sensitive nature of cultural resources the technical studies are not included in the Draft EIR. The following documents are summarized in this Draft EIR and are available for review at the William S. Hart Union High School District, 21515 Centre Pointe Parkway, Santa Clarita, CA 91350

- *Alternative Road Alignments, Castaic High School Site, Los Angeles County, CA, Supplemental Survey, McKenna et al., May 19, 2012.*
- *Addendum Studies: A Class III/Section 106 and Phase I CEQA Cultural Resources Investigation for the Proposed William S. Hart Union High School District Castaic High School Project Area in the Romero Canyon Area of Los Angeles County, California, Addendum Study, McKenna et al., January 16, 2012.*
- *A Class III/Section 106 and Phase I CEQA Cultural Resources Investigation for the Proposed William S. Hart Union High School District Castaic High School Access Roads in the Romero and Sloan Canyon Areas of Los Angeles County, California, McKenna et al., August 14, 2011.*



2. Introduction

- *Phase I Archaeological Investigation for the Proposed William S. Hart Union High School District Romero Canyon High School Site APN 3247-068-001 and 3247-068-004 (Tentative Tract 47807) Located in the Castaic Area of Los Angeles County, California*, Gwen R. Romani, April 28, 2010.
- *Intensive Phase I Archaeological Survey/Class III Inventory of APN 3247-068-001, -002, -003, and -004 Los Angeles County, California*, W & S Consultants, December 29, 2007.

2.5 FINAL EIR CERTIFICATION

This Draft EIR is being circulated for public review for a period of 45 days. Interested agencies and members of the public are invited to provide written comments on the Draft EIR to the District address shown on the title page of this document. Upon completion of the 45-day review period, the District will review all written comments received and prepare written responses for each comment. A Final EIR will then be prepared incorporating all of the comments received, responses to the comments and any changes to the Draft EIR that result from the comments received. This Final EIR will then be presented to the District for potential certification as the environmental document for the project. All persons who commented on the Draft EIR will be notified of the availability of the Final EIR and the date of the public hearing before the District.

The Draft EIR is available to the general public for review at::

The District website: <http://www.hart.k12.ca.us/index.php/schools/castaic-high-school> and at the following locations:

- William S. Hart Union High School District, 21515 Centre Pointe Parkway, Santa Clarita, CA 91350
- Valencia Public Library, 23743 W. Valencia Blvd., Valencia, CA 91355
- Castaic Public Library, 27971 Sloan Canyon Road, Castaic, CA 91384
- Stevenson Ranch Express Library, 26233 West Faulkner Drive, Stevenson Ranch, CA 91381
- Sloan Canyon Christian Academy, 28355 Sloan Canyon Road, Castaic, CA 91384

2.6 MITIGATION MONITORING

Public Resources Code Section 21081.6 requires that agencies adopt a monitoring or reporting program for any project for which it has made findings pursuant to Public Resources Code 21081 or adopted a Negative Declaration pursuant to 21080(c). Such a program is intended to ensure the implementation of all mitigation measures adopted through the preparation of an EIR or Negative Declaration.

The Mitigation Monitoring Program for the Castaic High School will be completed as part of the Final EIR and will be completed prior to consideration of the project by the District Board of Education.

2. Introduction

This page intentionally left blank.



3. *Environmental Setting*

3.1 *INTRODUCTION*

The purpose of this chapter is to provide, pursuant to provisions of the California Environmental Quality Act (CEQA) and the State CEQA Guidelines, a “description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, from both a local and a regional perspective.” The environmental setting will provide a set of baseline physical conditions from which the lead agency will determine the significance of environmental impacts resulting from the proposed project. A more detailed description of existing conditions for each resource is provided in Chapter 5, *Environmental Analysis*.

All figures are located at the end of this section.

3.2 *PROJECT LOCATION AND CHARACTERISTICS*

3.2.1 *Project Location*

The proposed Castaic High School project site is located in the community of Castaic, an unincorporated area of Los Angeles County, California (see Figure 3-1, *Regional Location*). The nearest city is Santa Clarita about five miles south; Castaic Lake is northeast, east of the I-5, and the Los Padres National Forest is to the north (see Figure 3-2, *Project Area*).

The project site encompasses land east and west of Romero Canyon Road. The proposed site includes APNs 3247-068-001, -002, -003, and -004; parcels 1, 2, 3 and 4 of Tract 47807 (see Figure 3-3, *Local Vicinity*). Parcels 1 and 4 are owned by Romero Canyon LLC; and parcels 2 and 3 (formerly the Lombardi property) are owned by Romero Canyon II, LLC.

The whole project site is 198 acres (includes all four parcels); the proposed school campus would be built on approximately 71.4 acres. The eastern site boundary is approximately two miles west of the intersection of Parker Road and Sloan Canyon Road; and the southern site boundary is approximately two miles north of the intersection of Hasley Canyon Road and Romero Canyon Road. Regional access to the existing site is from Interstate 5 (I-5) via Hasley Canyon Road or Lake Hughes Road / Sloan Canyon Road. Existing local access to the site is via Romero Canyon Road from Hasley Canyon Road or Sloan Canyon Road to Baringer Road to Romero Canyon Road.

3.2.2 *Regional Environmental Setting*

The project site is within the interior basin of Los Angeles County just to the north of the community of Val Verde. The region is surrounded by several significant mountain ranges, including the San Gabriel, Santa Susana, and Sierra Pelona Mountains, in addition to several canyons, valleys, and the Santa Clara River and Castaic Creek beds. The nearest topographical landmark is Loma Verde Peak, 11.5 miles northwest of Newhall and within one mile to the west of the site. The next-nearest prominent mountain peaks are to the north of the project area within the Angeles National Forest, including Townsend Peak (elevation 3,184 feet) and Whitaker Peak (elevation 4,151 feet). Local topography consists of narrow valleys and narrow ridgetops, separated by exceptionally steep and highly eroded slopes. Ridges and valleys are dendritic in form, narrow, with evidence of several landslides apparent in the site vicinity.



3. Environmental Setting

Several small, unnamed creeks traverse the project area. The project area slopes southward from one to five percent in the canyons with water drainage generally flowing in a south to southeasterly direction, towards Hasley Canyon. From Hasley Canyon the water flows east to Castaic Creek and then south into the Santa Clara River.

The land immediately surrounding the site consists of private lands; U.S. Forest Service is the nearest public land, approximately three miles to the northwest. Various rural residences surround the site and more dense residential development is to the east. North and west of the site the land is mostly undeveloped. Small residential developments occur to the west and around the southern roads of the site. The project site is not located within any critical habitat units for federally-listed species or any other designated conservation area.

Regional Geography

The project site is in the eastern Ventura Basin which is in the Transverse Ranges Geomorphic Province of Southern California. The Transverse Ranges Geomorphic Province extends 320 miles eastward from Point Arguello and San Miguel Island to the mountains of Joshua Tree National Park and is characterized by predominantly east-west elongated mountain ranges composed of sedimentary and volcanic rocks ranging in age from Cretaceous to Recent.¹ Major east-trending folds and faults reflect regional north-south compressional forces from the San Andreas fault.

Most of the hills surrounding Castaic are composed of the late Miocene Castaic Formation, a rock created in a marine environment. However, the hills to the south are composed of the Plio-Pliocene Saugus Formation, which are terrestrial in origin. The alluvium covering the valley floor is relatively shallow, a few hundred feet, and is up to 1.5 million years old. The most visible rock formations, known as the Violin Breccia, are in hills just west of the I-5 near Palomas Canyon. The rocks have a broken and loose appearance and are reddish brown. To the north near Pyramid Lake the I-5 lies mostly atop the Ridge Basin Group, a rock formation that has been measured to almost 30,000 feet deep.

Regional Hydrology

Most of the area to the east drains into Castaic Lake and Castaic Creek and to the north and west into Lake Piru and Piru Creek. Both creeks drain into the Santa Clara River and eventually flow into the Pacific Ocean at Ventura. Castaic Creek is a major tributary to the Santa Clara River, although most of the drainage has been cut off by the Castaic Dam. Piru Creek is about 10 miles west of the project site and drains flow from Whitaker Mountain north of Violin Summit.

3.2.3 Site Environmental Setting

As shown in Figure 3-4, *Aerial Photograph*, the project site consists of hills, steep ridges and canyons. The property was burned during the Castaic Fire in 2001. This burn has left many of the steep slopes susceptible to sheet erosion. Heavy rains in 2005 caused deep incising of canyons and formed new gullies to appear on the exposed slopes. A water tower is just outside the project limits on the southeast corner of the property. Additional disturbances include various dirt roads that cross through the property and scattered trash. The location and direction of site photographs is shown on Figure 3-4 and project site photographs are on Figures 3-5, 3-6, 3-7, 3-8, and 3-9, *Site Photographs*.

¹ The Cretaceous Period extends from 146 to 65 million years ago; the Recent, or Holocene, Epoch extends from approximately 11,500 years ago to the present.

3. Environmental Setting

Topography

The site is in a natural undeveloped state with the exception of a few dirt roads. It has both gentle hills and rugged steep slopes surrounding canyons. Ridgelines that run north to south are located along the western and central portions of the site. West-facing slopes tend to be steeper than the east-facing slopes. The elevation difference across the property is about 650 feet, ranging from about 1,730 feet above mean sea level (amsl) near the south-central portion to 2,380 feet amsl in the northwestern corner. Two canyons extend north-south through the property: Romero Canyon and an unnamed side canyon that intersects Romero Canyon from the west. Two other north-south canyons are outside the school site: unnamed canyon adjacent to the west site boundary and Sloan Canyon to the east.

Geology

Subsurface explorations performed during the geotechnical investigation identified alluvial deposits, colluvium, landslide deposits, Saugus Formation, and the Pico Formation. The project site consists of five soil classifications: 1) The largest drainage that occurs onsite runs north-south in the eastern portion of the property, and contains Hanford sandy loam, 2-9% slopes; 2) the northwest-southeast running drainage in the central western portion of the site has Metz loamy sand, 2-9% slopes; 3) Saugus loam, 15-30% slopes, is in the central southern part of the property; 4 and 5) Castaic and Saugus soils, 30-65% slopes are also present on the site.

There are 12 landslides on the project site (see map in Chapter 5.5, *Geology and Soils*). The landslide deposits range from relatively intact materials similar to bedrock to highly fractured, broken, and weathered materials.

Hydrology

The project site is in the Upper Santa Clara River Watershed. Site drainage is by surface flow; there are no drainage improvements onsite. Two canyons extend north-south through the property: Romero Canyon and an unnamed side canyon that intersects Romero Canyon from the west. There are two ephemeral blue-line streams within the site.² Hasley Canyon Creek is located near the southernmost point of the southern access route. A paved bridge crosses Hasley Canyon Creek. Castaic Creek to the east of the project area is mapped as a large wash with an extensive gravel surface (Ecorp 2012). The proposed access road to the site would cross Sloan Canyon. All onsite streams flow south toward Hasley Canyon. Hasley Canyon flows into Castaic Creek, which in turn flows into the Santa Clara River and eventually into the Pacific Ocean at Ventura.

Biology

Plants. Onsite vegetation communities include Chamise-Black Sage Chaparral, Disturbed Chamise-Black Sage Chaparral, California Sagebrush-California Buckwheat Scrub, Disturbed Coast Live Oak Woodland, Wild Oats Grassland, and Disturbed (see vegetation map in Chapter 5.3, *Biological Resources*).

² A "blue-line stream" appears as a broken or solid blue line on a USGS topographic map. All canyon streams on the project site are classified as "ephemeral streams," that only carry stormwater in direct response to precipitation. They may have a well-defined channel and typically lack the biological, hydrological, and physical characteristics commonly associated with intermittent or continuous conveyances of water.



3. Environmental Setting

One special status plant species, Peirson's morning glory (*Calystegia peirsonii*) was confirmed to be present on the property. Besides the disturbed coast live oak woodland, there were solitary oak trees observed adjacent to drainages that traverse the site. Oaks are protected by the County of Los Angeles.³

Animals. Bird species were the most abundant wildlife detected during the site visit. Several small songbirds including white crowned sparrow (*Zonotrichia leucophrys*), house finch (*Carpodacus mexicanus*), and a Say's phoebe (*Sayornis saya*) were found in the chaparral habitat. Several birds, including spotted towhee (*Pipilo maculatus*), California thrasher (*Toxostoma redivivum*) and western scrub jay (*Aphelocoma californica*) were found in the taller shrubs and woodland areas. Additionally, several common ravens (*Corvus corax*) were seen soaring and foraging over the site.

Mammal species observed or detected onsite include mule deer (*Odocoileus hemionus*) and coyote (*Canis latrans*), as well as scat from bobcat (*Lynx rufus*), domestic dog (*Canis familiaris*), and domestic horse (*equus caballus*). Various mammal burrows on the site can most likely be attributed to California ground squirrels (*Spermophilus beecheyi*) and Botta's pocket gopher (*Thomomys bottae*). Although the site has connectivity with open space on all sides, it does not represent a significant corridor connecting wildlife habitats.

Two special status wildlife species, northern harrier (*Circus cyaneus*) and Cooper's Hawk (*Accipiter cooperii*), were observed foraging over the site.

Oil Well

Two small structures were identified on a 1928 aerial photograph within the southwestern portion of the site. A larger graded area (300 feet x 400 feet) was identified near the exploratory well "Devil's Canyon" in the 1947 aerial photograph. A smaller graded area (200 feet x 200 feet) is depicted near the well in the 1952 and 1968 aerial photographs. Two small structures appear in that graded area. The graded area was undeveloped in 1989 through 2005. The remainder of the property has historically been undeveloped. An abandoned oil well of the ChevronTexaco Exploration & Production Company, identified as "Devils Canyon No. 1," is in the central portion of the site. The well was drilled to 7,657 feet bgs in 1946 and abandoned in 1947. Documents from the Division of Oil and Gas⁴ from 1947 describing the well as abandoned are appended to the Preliminary Environmental Assessment included as Appendix G-1 of this DEIR.

3.2.4 General Plan and Zoning

The existing Los Angeles County General Plan land use designation for the site is Rural Land 2 (RL2) as shown in the Santa Clarita Valley Area Plan. The Rural Land 2 designation provides for the maintenance and expansion of rural communities characterized by large lot sizes (generally two acres or greater), agricultural and equestrian uses, and an absence of urban services.

The project site has a zoning designation of A-2-2 (Heavy Agriculture) under the Los Angeles County Municipal Code, Title 22. Accredited schools through grade 12 including appurtenant facilities, are conditionally permitted in the A-2-2 zoning designation. The school district would need to request a conditional use permit from the City.

³ Under the Los Angeles County Oak Tree Ordinance, any tree in the genus (*Quercus* spp.) shall not be cut, destroyed, removed, relocated, damaged, or encroached upon if its trunk is eight inches or more in diameter; four and a half feet above mean natural grade, or if multiple trunks are present, if the two largest trunks have a combined diameter of 12 inches or more. If any of these conditions are present, a permit is required.

⁴ Now named Division of Oil, Gas, and Geothermal Resources (DOGGR).

3. *Environmental Setting*

The California legislature granted school districts the power to exempt their school construction projects from this City's General Plan and related land use and zoning requirements, provided the school district complies with the terms of Government Code Section 53094. Namely, school districts must comply with the following regulations:

- Two-thirds of the Board must vote to render a city's zoning ordinance regulations inapplicable;
- Within ten days of taking the action, the Board of Education must provide the City notice of the action under Section 53094.

In accordance with this authority, the William S. Hart Union High School District Governing Board plans to adopt a resolution on the basis of Government Code Section 53094 exempting County of Los Angeles General Plan and zoning designation for the proposed Castaic High School project site. The Governing Board will then provide proper notice to the County of Los Angeles in compliance with Government Code Section 53094. Assumptions Regarding Cumulative Impacts

Section 15130 of the CEQA Guidelines states that cumulative impacts shall be discussed where they are significant. It further states that this discussion shall reflect the level and severity of the impact and the likelihood of occurrence, but not in as great a level of detail as that necessary for the project alone. Section 15355 of the Guidelines defines cumulative impacts to be "...two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Cumulative impacts represent the change caused by the incremental impact of a project when added to other proposed or committed projects in the vicinity.

The CEQA Guidelines (Section 15130 [b][1]) state that the information utilized in an analysis of cumulative impacts should come from one of two sources:

- A. A list of past, present and probable future projects producing related cumulative impacts, including, if necessary, those projects outside the control of the agency; or
- B. A summary of projections contained in an adopted General Plan or related planning document designed to evaluate regional or area-wide conditions.

The cumulative impact analyses in this Draft EIR use method A due to the large number of projects planned throughout the area.

Method A

Proposed and approved projects include present and probable future projects that are either under construction, approved, or in the design phase. Table 3-1 provides a list of 16 known local development projects in the vicinity of the project site. No specific development proposals have been prepared so the number of units shown is the permitted number of units (future planned units may be more or less than currently permitted).



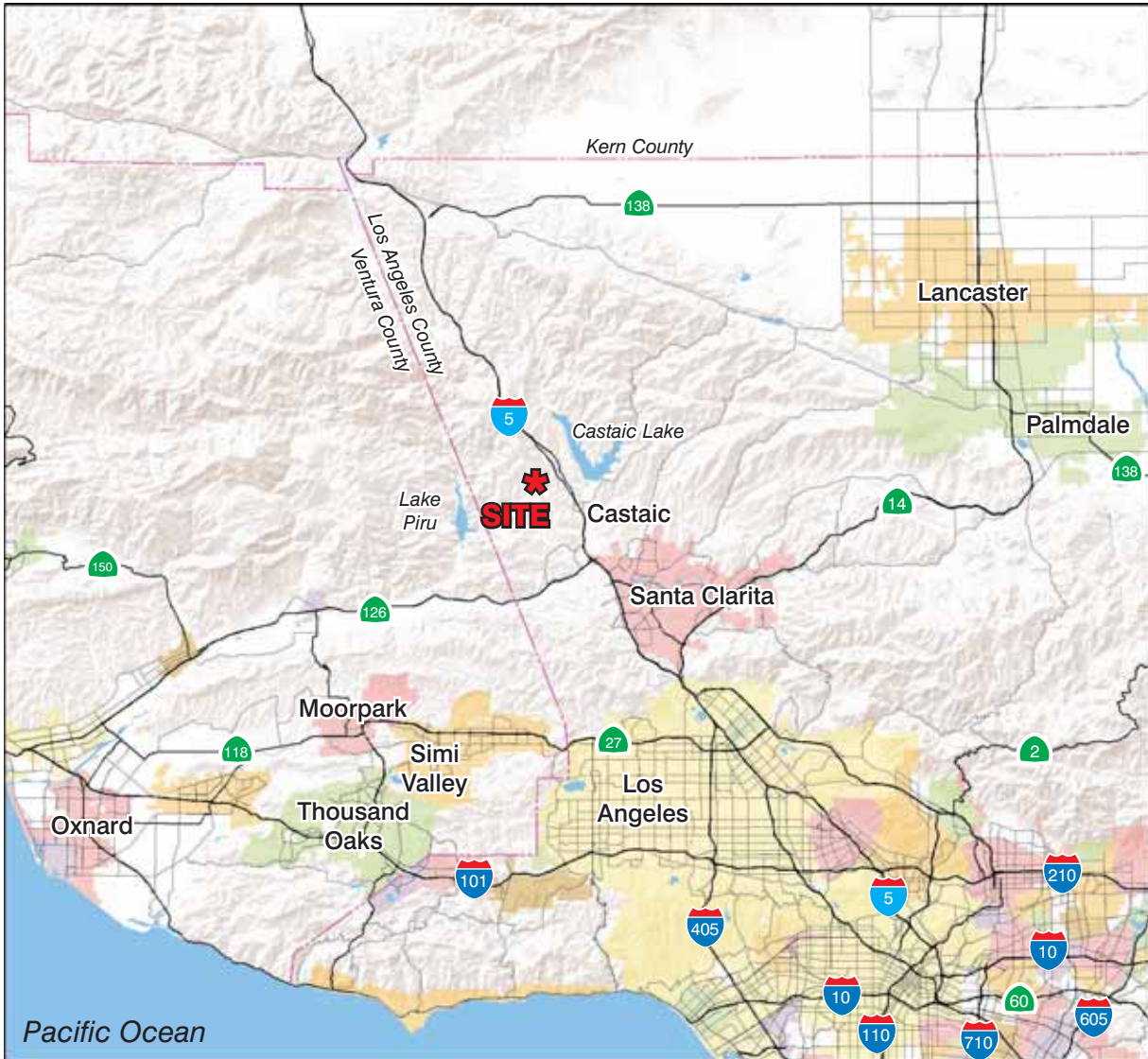
3. Environmental Setting

Table 3-1
Related Projects

Tract/GP Designation	Units	Type
TR067278	23 DU	Single Family
TR42537	222 DU	Single Family
TR46443	95 DU	Single Family
TR47807	38 DU	Single Family
TR52729	36 DU	Single Family
PM069961	4 DU	Single Family
PM071059	4 DU	Single Family
PM19149-2	4 DU	Single Family
GP (NU1/RR1)	30 DU	Single Family
GP (NU1/RR1)	95 DU	Single Family
GP (NU2/RR2)	12 DU	Single Family
GP (NU3/RR3)	3 DU	Single Family
GP (NU3/RR3)	47 DU	Single Family
GP (NU3/RR3)	46 DU	Single Family
GP (UR1)	386 DU	Single Family
Subtotal	1,045 DU	Single Family
Elementary School	900 Students	Elementary School

3. Environmental Setting

Regional Location



0 12
Scale (Miles)

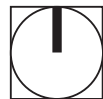
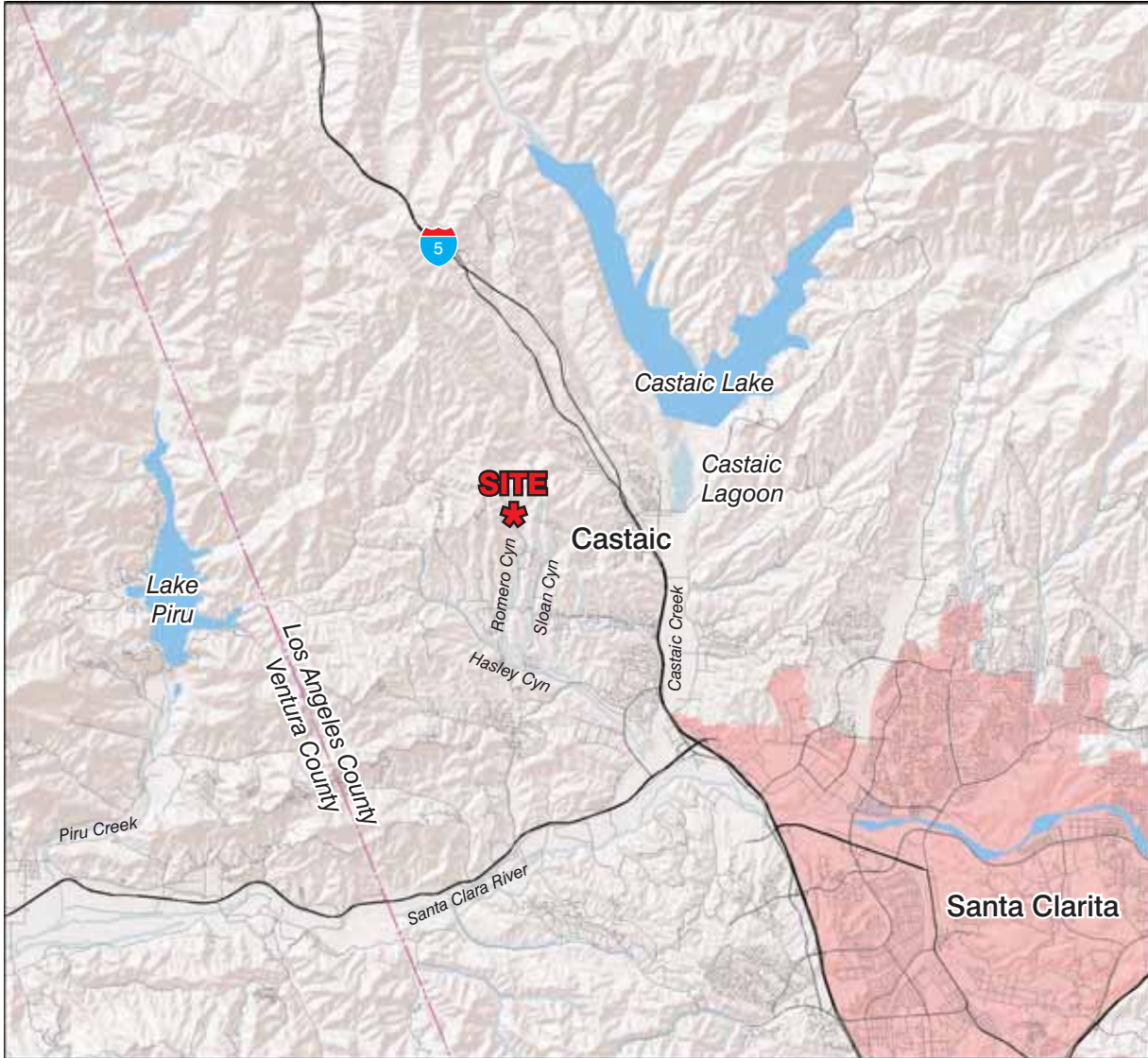


3. Environmental Setting

This page intentionally left blank.

3. Environmental Setting

Project Area

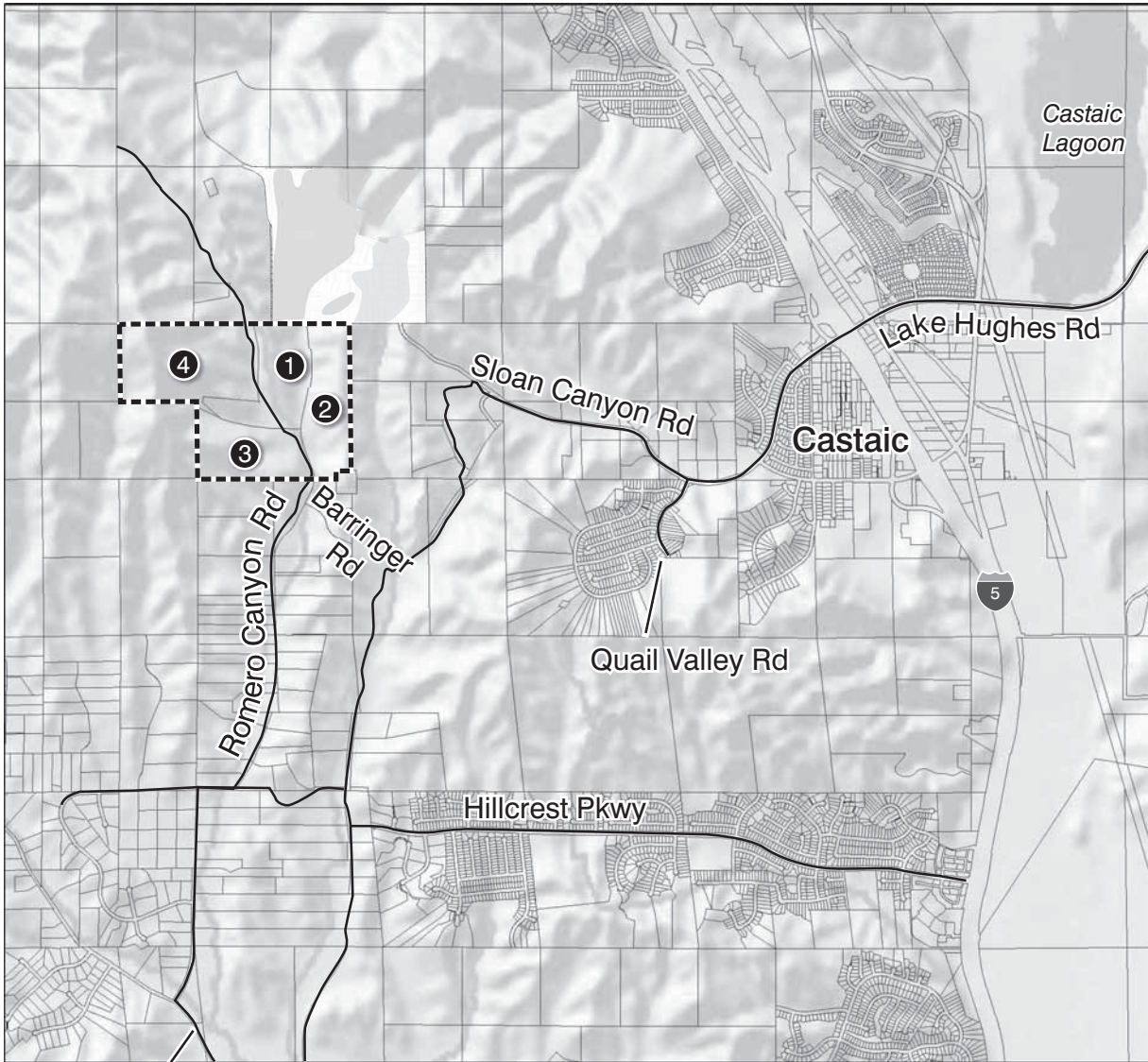


3. Environmental Setting

This page intentionally left blank.

3. Environmental Setting

Local Vicinity



- Project Site (Tract 47807)
- ④ Parcel Numbers

0 3,000
Scale (Feet)

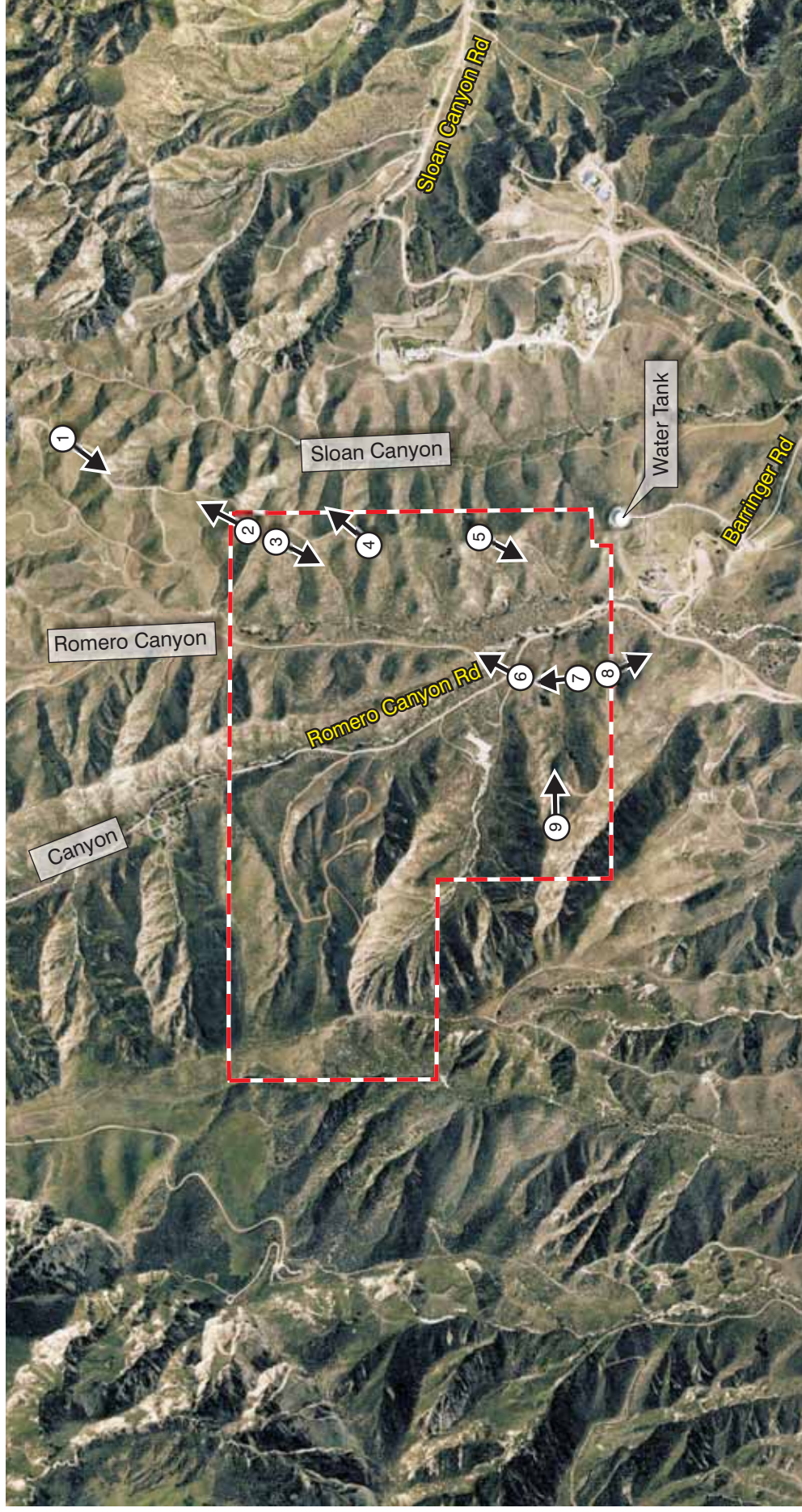


3. Environmental Setting

This page intentionally left blank.

3. Existing Conditions

Aerial Photograph



① Photograph Location and Direction

--- Property Boundary

Source: Google Earth 2011

Castaic High School Draft EIR

3. Environmental Setting

This page intentionally left blank.

3. Environmental Setting

Site Photographs



Photo No. 1



Photo No. 2

3. Environmental Setting

This page intentionally left blank.

3. Environmental Setting

Site Photographs



Photo No. 3



Photo No. 4

3. Environmental Setting

This page intentionally left blank.

3. Environmental Setting

Site Photographs



Photo No. 5



Photo No. 6

3. Environmental Setting

This page intentionally left blank.

3. Environmental Setting

Site Photographs



Photo No. 7



Photo No. 8

3. Environmental Setting

This page intentionally left blank.

3. Environmental Setting

Site Photographs



Photo No. 9

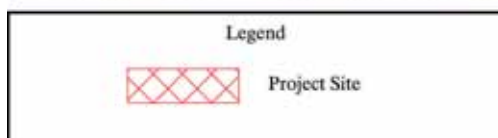
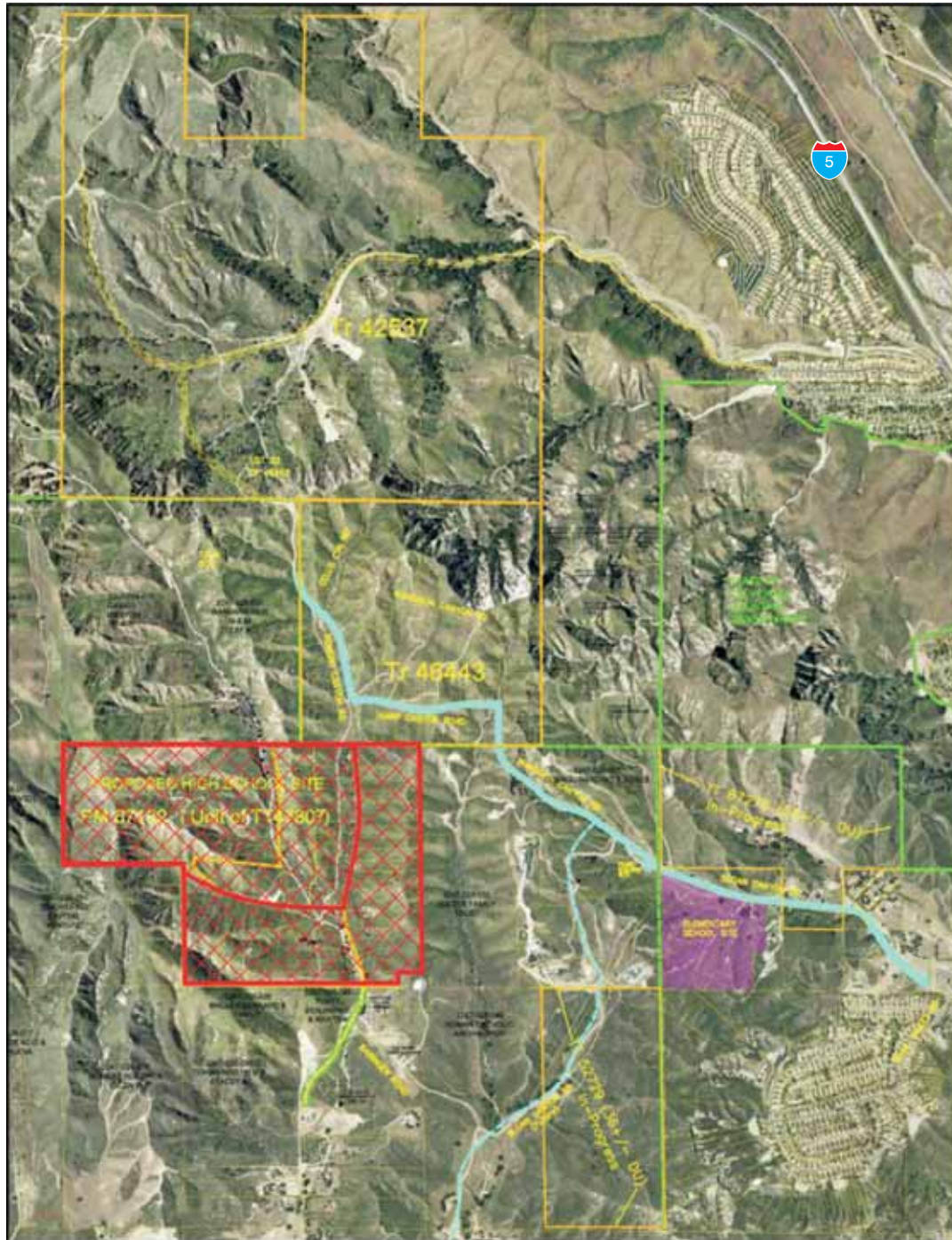


3. Environmental Setting

This page intentionally left blank.

3. Environmental Setting

Cumulative Projects Map



0 2,000
Scale (Feet)



Source: Austin-Foust Associates 2012

Castaic High School Draft EIR

The Planning Center | DC&E • **Figure 3-10**

3. Environmental Setting

This page intentionally left blank.

4. *Project Description*

4.1 INTRODUCTION

The William S. Hart Union High School District's (District) proposed project consists of construction and operation of a new 250,000-square-foot high school for a maximum of 2,600 students in Castaic.

4.2 PROJECT OVERVIEW AND BACKGROUND

The proposed project site is in an approved residential tract that was never developed (Tract 47807 parcels 1, 2, 3, and a portion of 4). This residential development was the subject of a previously adopted Mitigated Negative Declaration (MND) prepared by Bright and Associates in 1985. In 1992 the land owner/project applicant obtained other various agency approvals, such as Vesting Tentative Tract No. 47807 and associated Conditional Use Permit 89-213, Oak Tree Permit No. 89-213, and grading plan for a 79-lot residential tract. The land owner also obtained a Section 404 permit from the U.S. Army Corps of Engineers, a Section 401 Water Quality Certification from the Los Angeles Regional Water Quality Control Board, and a Section 1602 Streambed Alteration Agreement from the California Department of Fish and Game. Immediately north of Tract 47807, a two-lane access road was previously approved as part of the Tract 46443, which would have provided access for 96 single-family lots on 193.25 acres. These approvals and permits along with a mitigation plan and impact fees for biologic impacts, would allow the owner to proceed with the residential development.

The proposed high school project has been in the planning stages since 2005. In 2011 a Notice of Preparation (NOP) was prepared and circulated for public review, from February 25, 2011, to March 28, 2011. This document was prepared in compliance with CEQA and included Probable Environmental Effects of The Project. A public scoping meeting was held in the school district board room at 21515 Centre Pointe Parkway in Santa Clarita, on March 8, 2011, to obtain input from the public and interested agencies.

Based on public comments the District elected to add additional access routes to the school and circulated an NOP and preliminary environmental assessment (Initial Study) that identified preliminary environmental impacts associated with the construction and operation of the school (October 12, 2011, to November 10, 2011). At that time the high school was planned on Tract 47807 parcels 1 and 4 (now referenced as Romero Canyon Alternative Site).

The District Board was informed at its regular meeting on November 16, 2011, that Tract 47807 parcels 2 and 3 had become available for purchase, as stated in a letter from the property owner dated October 2011. The District decided that this "hybrid site," which would shift the school campus to the east and was on portions of all four parcels, might be less costly and have fewer environmental challenges than the original site. The project on this second site (proposed project) was refined and a third NOP and Initial Study were circulated from January 30, 2012, to February 28, 2012. The three NOPs and all comments received during the public review period are in Appendix A to this Draft EIR.

In this document, the "project site" refers to the entire 198-acre, four-parcel site (not all of which would be graded), and the "school site" refers to the 71.4-acre site proposed for development of the high school and the landslide remediation area.



4. Project Description

4.3 PROJECT NEED

The proposed project is required to relieve existing overcrowding at other District high schools serving the Santa Clarita Valley and to accommodate projected student population growth in the area.

4.4 STATEMENT OF OBJECTIVES

The following objectives have been established for the Castaic High School project. These project objectives will aid decision makers in their review of the project, project alternatives, and associated environmental impacts:

- Provide integrated educational facilities for schoolchildren in grades 9–12 on one site;
- Relieve serious overcrowding at other District high schools serving the Santa Clarita Valley;
- Allow students within the community of Castaic to attend schools in their neighborhoods;
- Provide an additional high school to reduce reliance on the use of temporary portable classrooms in other District-operated high schools;
- Provide a new high school to serve existing and future population growth within the District's service boundaries;
- Comply with the Division of State Architect's (DSA) requirements for New School Construction related to Fire Life Safety, Structural and Access Compliance;
- Comply with the California Department of Education's (CDE) design standards and policies for new school construction in designing the needed school facilities;
- Maximize the use of state funds for site acquisition and construction of the needed school facilities.

4.5 PROJECT CHARACTERISTICS

4.5.1 School Facilities

The proposed project consists of a comprehensive high school with approximately 250,000 square feet of building area, including several classroom buildings, a library, a performing arts building, a multipurpose building, a physical education building with gymnasium, and an administrative building. At this time the campus buildings are planned to be one and two stories tall. However, plans are subject to change as they are refined, and some of the final building plans may call for three stories. Athletic facilities would include a 5,000-seat football/soccer stadium with a running track, tennis courts, basketball courts, baseball and softball fields, and other play fields. The stadium and other fields would have nighttime lighting for evening sports events. The tallest structures on campus are likely to be the light poles at the stadium, which typically reach 80 to 90 feet.

Other Facilities

Helipad. The Los Angeles County Fire Department (LACoFD) has requested the grading of a pad on which it could build a helipad to serve the Castaic area. Construction and operation of the helipad would

4. Project Description

be the responsibility of the LACoFD. The District has agreed to include a 1.1-acre flat pad at an elevation of 2,010 feet above mean sea level (amsl) to accommodate the County's request.

Water tanks. The project would include grading of a 0.46-acre pad for two aboveground water tanks. The pad would be at the southwest corner of the project site, west of the helipad. Construction of one 750,000-gallon water tank would be included in the project with water serving the new high school. The second water tank would serve future residential development that is already approved for the surrounding area. Construction of the second tank is not part of the proposed project. The tank pad would be at an elevation of 2,050 amsl.

Currently the District is undecided on a few additional facilities.

Broadcasting facilities. If the district decides to include broadcasting facilities, then cellular, television, and satellite transmission towers would potentially be located on one of the hilltops outside the main campus.

Energy technology. The school may also include advanced energy technology, such as solar photovoltaic panels for electricity and stormwater runoff storage facilities for dry weather irrigation.

4.5.2 School Programs

Traditional School. The high school is expected to open with ninth grade students only during the first year of operation (2015–2016). Tenth, eleventh and twelfth grades would be added in successive years as the initial 9th grade students move up in grade. Current enrollment projections for all grade levels are 320 in 2015, 638 in 2016, 986 in 2017, and 1,316 in 2018. The school would have a full buildout design capacity of 2,600 students.

Typical high schools in the district operate on a traditional single-track, two-semester, 180-day calendar. School instruction hours are usually from 8:00 AM to 3:00 PM, with staff and students arriving on campus between 7:00 AM and 8:00 AM and leaving between 3:00 PM and 5:00 PM. High school facilities, including auditoriums, gymnasiums, and fields, are typically used from 7:00 AM to 11:00 PM, including Saturdays and Sundays. Hours of operation during the summer months generally range between 7:00 AM to 7:00 PM (longer at some district high schools during athletic events).

Summer School. Summer school sessions typically run between mid-June through mid-August from about 8:00 AM to 12:30 PM. The number of students, faculty, and staff attending the summer sessions would vary from year to year, depending on student need and available capacity.

School-Related Events. The proposed project may have after-school programs for the students, such as athletic activities, special-interest clubs, and extracurricular activities. Additionally, the proposed high school may have occasional nighttime events during the school year. Some of these events would be campus wide, such as school plays and open house, and others would be grade specific, such as commencement.

Career Tech Program. The school may include a career technical program offering a specialized curriculum. The campus may offer both a traditional high school program and a career technology education (CTE) program, or use the new school for a full CTE high school.



4. Project Description

Adult School. Adult education programs may take place Monday through Thursday outside of normal school hours (between 6:00 PM and 9:00 PM). The number of students, faculty, and staff attending the adult education sessions would vary depending on need.

Community Use. According to California Education Code 38131(b), Civic Center Act, when facilities within the District are not scheduled for school- or District-related events, the public can obtain a permit from the District to utilize the facilities. For example, nonprofit community organizations and members of the public are permitted to use school facilities for supervised recreational activities, meetings, and public discussions. Operation of the school facilities for community use may occur outside normal school operating hours, generally between 3:00 PM and 10:00 PM during the weekdays and all day on the weekends, and may include use by churches on Sundays

Community uses may vary, depending on events planned by the District, the community's needs, and applications for permits. Typical district high schools have spring and winter theater programs for up to five different groups. The programs last three to four days (rehearsals three days, performances one to two days) and hours vary depending on after-school programs. Attendance at programs vary from 300 to 600 (adults and children).

City of Santa Clarita basketball practice takes place during the week, games on Saturdays (times vary from 8 AM to 10 PM). Attendance varies between 50-100 per game. Basketball organizations (possibly three different groups) practice during the week, with games on Saturday's and Sunday's. Attendance varies between 50 to 100 per game. Parking for civic center uses would be provided by the onsite parking lot.

4.5.3 Roadway Infrastructure

A supporting road network is not anticipated until approved residential development starts construction. Considering the poor economy, residential construction projects may not happen for years. However, the high school is currently needed to relieve overcrowding at existing high schools and to serve the local community; therefore, the school district would be required to extend existing roadways to the school site. There are two access scenarios and various suboptions under consideration by the District, as described below.

Access Scenario 1

Access Scenario 1 provides public access along a route that begins as an extension of Sloan Canyon Road to the high school campus. As shown on Figure 4-2, *School Access Roadways*, the District is considering two options for the extension of Sloan Canyon Road to the campus. These options are as follows:

Option A

1. Sloan Canyon Road west to Mandolin Canyon Road
2. Mandolin Canyon Road north to Harp Canyon Road
3. Harp Canyon Road west to North Romero Canyon Road
4. North Romero Canyon Road south to Valley Creek Road

4. Project Description

5. Valley Creek Road to the school access point

Option B

1. Sloan Canyon Road west to Canyon Hill Road
2. Canyon Hill Road west to Valley Creek Road at school access point

Access Scenario 1 also provides emergency-only access along a southern route (Romero Canyon Road). An emergency-access gate would be constructed on Romero Canyon Road just south of Baringer Road. The gate must be at least 20 feet wide, and must be approved by the Los Angeles County Fire Department.

As explained in the Section 5.14, *Traffic and Transportation*, Access Scenario 1 is adequate to provide access for the high school with up to 1,600 students. Prior to exceeding this 1,600-student limit, the District must complete one of the following: 1) widen the pavement and restripe the northern public access route to provide four lanes of travel (two lanes in each direction; only possible with Option A); 2) complete the southern public access route (Access Scenario 2); or 3) make a finding that other roads in the area have been fully constructed by others and that these roads will provide adequate access to accommodate the ultimate school capacity of 2,600 students.

Access Scenario 2

Access Scenario 2 includes the same northern public access road options as Access Scenario 1, but is combined with a southern public access road connecting the campus to Hillcrest Parkway. This proposed route follows existing dirt roads.



1. Sloan Canyon Road north beginning at the western end of Hillcrest Parkway
2. Baringer Road west to Valley Creek Road
3. Romero Canyon Road/Valley Creek Road north to campus.

Roadway Improvements

All public roadway improvements associated with this project would include a five-foot concrete sidewalk along one side of the road and a 4-foot-wide, on-road unmarked space for bicyclists (Class III bike route¹). As residential development comes into the area, a multi-purpose trail would be constructed along the opposite side of the road. The multi-purpose trail would not be constructed as part of the school project, except on the project site as part of the drainage facility service roads. Other on- and off-site trails would be determined by the Los Angeles County Parks and Recreation Department. Typical cross-sections of roads are shown on Figure 4-3, *Road Sections*. The grading plans and areas disturbed by grading are shown on Figure 4-4, *Grading Plan: Northern Access Roads* and Figure 4-5, *Grading Plan: Southern Access Roads*. While the District is considering various options for these roadways, subject to

¹ The Streets and Highway Code Section 890.4 defines a "Bikeway" as a facility that is provided primarily for bicycle travel.

(1) Class I Bikeway (Bike Path). Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with crossflow by motorists minimized.

(2) Class II Bikeway (Bike Lane). Provides a striped lane for one-way bike travel on a street or highway.

(3) Class III Bikeway (Bike Route). Provides for shared use with pedestrian or motor vehicle traffic.

4. Project Description

approval by the County, the amount of grading required and the areas disturbed are based on grading for the full width right-of-way of the road classifications. The various roadway improvement options are presented in Appendix I-3 (Supplemental Traffic Study May 2012).

Valley Creek Road would start on Romero Canyon Road at the school property line and encircle the east and north side of the campus. It would be developed as a two-lane undivided roadway either 28 or 30 feet wide. Valley Creek Road would bridge over Los Angeles County Romero Canyon flood plain limits.

Sloan Canyon Road. Sloan Canyon Road would be a 40-foot-wide roadway with two 14-foot-wide lanes (one in each direction) and a 12-foot-wide striped median. Signs would be installed identifying a Class III bike path adjacent to each curb (no striping).

Canyon Hill would be developed as a two-lane undivided roadway either 28 or 30 feet wide.

Baringer Road would be developed as a two-lane roadway 28 to 32 feet wide. Baringer Road would bridge over Los Angeles County Romero Canyon flood plain limits.

Romero Canyon Road. Romero Canyon Road would serve as an emergency-only route. An emergency-access gate meeting LACoFD specifications would be constructed on Romero Canyon Road just south of Baringer Road. and turn-outs would be constructed on the north and south sides of the gate.

4.5.4 Parking

Five separate on-site paved parking lots are planned for the proposed high school. The five parking lots would provide 868 parking spaces. The main student/visitor parking lot would be on the northeastern portion of the site near the main access route off Canyon Oak Road and provide 360 parking spaces. There would be two staff/event parking lots with one to the north and south of the student/visitor parking lot. The northern lot would provide 173 parking spaces and the southern lot would provide 143 parking spaces. The remaining two parking lots in the southern portion of campus would primarily serve as event parking and would provide 129 and 63 parking spaces. In addition to the on-site paved parking lots, the two areas east and south of the main campus designated as Retention Basins A₁ and A₂ would be used as overflow event parking, as necessary.

The overflow parking area would be used only when needed for large events such as football games or graduation ceremonies. These events are held during the dry season when the basins are not used for stormwater retention.

4.5.5 Utilities

Development of the site would require infrastructure that currently does not exist. On- and offsite storm drains, and extensions of existing utilities, including sewer, water, telecommunications, and electricity, are shown in Figure 4-6, *Utility Plan*. The utilities would be extended from Quail Valley Road along Sloan Canyon Road to the project site.

Stormwater Drainage

Stormwater on the campus would discharge into holding basins on the perimeter of the campus (see Figure 4-7, *Area Drainage Plan*). Detention basins perform temporary containment of stormwater

4. Project Description

followed by controlled release of water into a downstream drainage facility or stream. Retention involves removal of stormwater from a basin by evaporation, infiltration into the soil, or pumps, and does not involve any discharge. Evaporation basins are similar to retention basins but are shallow so only a few inches of water is retained and will quickly evaporate.

The total drainage area in post-project condition would increase to 444 acres, or about 1.5 percent larger than the existing drainage area (437 acres). The larger drainage area along with a significant increase in impervious surfaces (roads, hard courts, walkways, parking lots, etc.) would increase stormwater runoff from the project site. Total impervious area is approximately 46 acres for all school building areas, roads, walkways, paved parking areas, and paved sports areas.

In compliance with Los Angeles County requirements, the project has been designed to include stormwater basins that would reduce offsite post-project drainage flow rate and volume to the same as the existing rate and volume. The total volume required for holding in the basins is the net post-project increase during a 50-year clear condition: currently 14.86 acre-feet. The net increase in flow rate that must be held onsite by drainage facilities is 74 cubic feet per second (cfs).

Proposed stormwater facilities are described in Table 4-1; the locations of the facilities are shown on Figure 4-8, *Campus Drainage Plan*.

Table 4-1
Stormwater Basins

Designation and Facility	Location	Area¹	Depth	Volume²
A1 Evaporation Basin	South	4.59	10 inches	3.825
A2 Evaporation Basin	Southeast	8.19	10 inches	6.825
B1 Retention Basin	North	0.51	5 feet	2.55
B2 Retention Basin	Southeast	0.58	5 feet	2.9
C1 Evaporation Basin	Northwest	2.66	10 inches	2.22
C2 Evaporation Basin	West	1.31	10 inches	1.09
Total		17.84		19.41

Source: Sikand 2012

¹ Area is shown in acres

² Volume is shown in acre-feet

- Basin A₁ drainage area includes the softball fields, event parking lot, and other southwest portions of the campus.
- Basin A₂ drainage area includes the football field event parking lot and other central portion of the campus, along with overflow from Basin A₁.
- Basin B₁ drainage area includes the baseball field, the tennis courts, and the northern part of the campus.
- Basin B₂ drainage area includes the parking lots along the front of the campus and the overflow from Basin B₁. Basin B₂ would have an overflow pipe that would discharge into an engineered swale along the Valley Creek Road. Water in this swale would discharge to Romero Canyon and follow the existing course south.



4. Project Description

- Basin C₁ and C₂ drainage area is the landslide removal area.

Off-Campus Drainage

A swale outlet would convey drainage from engineered slopes along a drainage channel on the north side of Canyon Hill Road to a culvert about 600 feet east of Valley Creek Road. The culvert would run under Canyon Hill Road to convey existing stormwater flows to the existing natural channel along Sloan Canyon.

Drainage from Romero Canyon and East Canyon north of the school site would be directed into a drainage channel along the north side of Valley Creek Road. The drainage channel would run along the road, crossing under Canyon Hill Road. The drainage channel would discharge into a reinforced concrete box (RCB) culvert about 440 feet in length that would pass under Valley Creek Road and discharge into an engineered swale just west of Valley Creek Road. The swale would continue southward till it would discharge into the existing Romero Canyon natural drainage at the school site boundary (see Figure 4-8).

Valley Creek Road would bridge East Canyon natural drainage channel about 300 feet north of the south site boundary. Roadway protection to reduce erosion along the east side of Valley Creek Road would be installed underground for a length of approximately 600 feet starting 500 feet south of the site boundary and extending north. Four optional designs are being considered for roadway protection: one of concrete; one of shotcrete – concrete sprayed through a hose; welded wire and rock revetment; or soil cement – natural soil mixed with a small amount of portland cement and water.

Baringer Road would intersect with Valley Creek Road at a 90-degree knuckle intersection. Two options are proposed for this intersection. Option 1 would locate the intersection would be about 400 feet south of the south site boundary. Baringer Road would bridge the Romero Canyon natural drainage; the bridge would be about 105 feet long. In Option 2 the west end of Baringer Road would be shifted south about 95 feet. Baringer Road would cross Romero Canyon with a 50-foot-long bridge or a concrete arch culvert.

Baringer Road and Sloan Canyon Road Crossings over Sloan Canyon

Three options are under consideration for the intersection of Baringer Road with Sloan Canyon Road along the southern access route. Option 1 includes construction of two roads on the existing rights-of-way. Baringer Road crosses Sloan Canyon just west of the intersection, and Sloan Canyon Road crosses Sloan Canyon just south of that intersection. Sloan Canyon would pass under each roadway in a culvert in this option.

Options 2A and 2B would construct Baringer Road and Sloan Canyon Road connecting through a curve west of Sloan Canyon; a side road from Sloan Canyon Road would be built in these options to provide access from Baringer Road to and from Sloan Canyon Road to the north. In options 2A and 2B Sloan Canyon would pass under Sloan Canyon Road in a culvert; the side road would pass over Sloan Canyon via a bridge about 80 feet long.

4. Project Description

Sewers

The project also includes an application to the Santa Clarita Valley Sanitation District, part of the Sanitation Districts of Los Angeles County (LACSD), to annex the project site from Los Angeles County to Santa Clarita Valley.

Development of the proposed project would include the installation of new sewer lines, which would connect to existing sewer systems. The project, in combination with development of nearby planned projects, would also require upgrades to some existing sewers between the end of the existing sewer main from Quail Valley Road to the LACSD trunk sewer at the Ridge Route Road and Neely Street intersection. Proposed new sewers are shown in Table 4-2 and Figure 4-9, *New Sewer Plan* and sewer upgrades are shown in Table 4-3 and Figure 4-10, *Upgraded Sewer Plan*.

**Table 4-2
New Sewers**

Roadway	Segment	Diameter, inches
Valley Creek Road	North site boundary to intersection Valley Creek Road and Canyon Hill Road	8 inches
Canyon Hill Road	Valley Creek Road to Sloan Canyon Road	8 inches
Sloan Canyon Road	Canyon Hill Road to about 0.25 mile west of Quail Valley Road	8 inches
Sloan Canyon Road	About 0.25 mile west of Quail Valley Road to Quail Valley Road	10 inches

Source: Sikand 2012.



Table 4-3 Upgraded Sewers

Roadway	Segment Location	Facility No.	Length, feet	Diameter, inches	
				Existing	Upgrade
Sloan Canyon Road	Quail Valley Road to Parker Road	PC 10569	343	8	12
Cherry Drive	Gold Hill Drive to north of Church Street	PC 9706	988	8	12
Sloan Canyon Road	The Old Road to Castaic Road		549	10	15
Castaic Road	Part of segment between Lake Hughes Road and Ridge Route Road	PC 9173	691	8	12
		9704	348	10	18
		2598-M	346	8	15
		9704	346	10	15
		2598-M	527	8	15
			271	8	12

Source: Sikand 2012

Water

The project site is currently in the service area of Los Angeles County Water Works District 36 (LACWWD 36). The current property owner has submitted an application to the Newhall County Water District (NCWD) to annex the project site from LACWWD 36 to NCWD. That annexation would also require approval from LACWWD 36 and from the Local Agency Formation Commission of Los Angeles County. It

4. Project Description

is expected that action on that annexation would be completed after the final EIR for the proposed project is considered for certification by the District's governing board. A 750,000-gallon water tank would be constructed on a hill above the campus and would serve the high school. The tank would be built, operated, and maintained by NCWD.

Two pump stations would be built offsite. One station would be about 0.5 mile east of the project site along the south side of Sloan Canyon Road. The second station would be at least 300 feet north of the project site in Tract 46443. Each station would be enclosed in a block wall building about 50 by 75 feet in floor dimensions.

Electricity, Phone & Cable

Electric, phone, and cable lines would run under Sloan Canyon Road and other access roads.

4.6 CONSTRUCTION PHASE

The campus would be constructed on a portion of Tract 47807, with the majority of the project construction within parcels 1, 2, and 3. Valley Creek Road and landslide remediation work would extend into parcel 4. The construction staging areas would be clearly marked, and barriers would be installed to prevent disturbance. Demolition activities are expected to take approximately two months as parcels are acquired.

Overall, project-related construction activities would take approximately 2.5 years to complete. Construction would start with grading and compaction of the site and roadways, followed by any necessary utility trenching. The footings, buildings, and utilities would then be constructed. The area surrounding the new buildings would be covered with concrete and asphalt, and curb cuts, driveways, and final road improvements would be constructed. Finally, landscaping, site fencing, and any finishing work would be completed. Project construction phasing is summarized below in Table 4-5.

Grading

Project Site

Project site grading quantities are shown below in Table 4-5. A grading map for the school site is shown in Figure 4-11, *Grading Plan*.

Table 4-5		
Estimated Project Site Grading		
Site	Cut	Fill
Landslide Areas	900,000	60,000
School Campus including on-site roadways	2,700,000	3,940,000
<i>Subtotal</i>	<i>3,600,000</i>	<i>4,000,000</i>
Removal and Recomposition	1,100,000	1,100,000
3% Combined Bulking/Shrinking Factor	150,000	0
Total	4,850,000	5,100,000
Note: Numbers are in cubic yards.		

4. Project Description

Roadway Grading and Pavement

Grading quantities and pavement areas for access routes are shown in Table 4-6. Grading maps for the access roads are shown on Figures 4-4 and 4-5.

Table 4-6
Roadway Grading Quantities and Pavement Areas

Access Route	Roadway	Cut , cubic yards	Fill , cubic yards	Pavement Area, square feet	
				Roadway	Sidewalk
Scenario 1 Option A					
Northern Route via Sloan Canyon Road, Mandolin Canyon Road, Harp Canyon Road, North Romero Canyon Road; no southern public access route.					
Northern Route Roadways 4 lanes, roadway pavement 52 feet wide	North Romero Canyon Road, Harp Canyon Road, and Mandolin Canyon Road in Tract 46443	250,000	320,000	116,000	14,500
	Mandolin Canyon Road from Tract 46443 to Sloan Canyon Road	285,000	45,000	84,000	10,500
	Sloan Canyon Road from Mandolin Canyon Road to Quail Valley Road	95,000	35,000	108,000	13,500
	Subtotal	630,000	400,000	NA	NA
	Removal and Recompaction and 3% Bulking Factor	250,000	230,000	NA	NA
	Total	880,000	630,000	308,000	38,500
Scenario 1 Option B					
Northern Route via Sloan Canyon Road and Canyon Hill Road; no southern public access route.					
Northern Route Roadways 4 lanes, roadway pavement 52 feet wide	Canyon Hill Road	460,000	167,800	104,000	13,000
	Sloan Canyon Road, Canyon Hill to Quail Valley	94,000	59,000	108,000	13,500
	Mandolin Canyon Road (future), North of Canyon Hill Road to Tract 46443	146,000	253,200	28,000	3,500
	Subtotal	700,000	480,000	NA	NA
	Removal and Recompaction and 3% Bulking Factor	230,000	200,000	NA	NA
	Total	930,000	680,000	240,000	18,300
Scenario 2 Option A					
Northern Route via Sloan Canyon Rd, Mandolin Canyon Road, Harp Canyon Road, North Romero Canyon Road; Southern Route via Sloan Canyon Road, Baringer Road, Valley Creek Road					
Northern Route Roadways 2 lanes, roadway pavement 40 feet wide	North Romero Canyon Road, Harp Canyon Road, and Mandolin Canyon Road in Tract 46443	250,000	320,000	116,000	14,500
	Mandolin Canyon Road from Tract 46443 to Sloan Canyon Road	285,000	45,000	84,000	10,500
	Sloan Canyon Road from Mandolin Canyon Road to Quail Valley Road	95,000	35,000	108,000	13,500
	Subtotal	630,000	400,000	NA	NA
	Removal and Recompaction and 3% Bulking Factor	250,000	230,000	NA	NA
	Total	880,000	630,000	308,000	38,500



4. Project Description

Table 4-6
Roadway Grading Quantities and Pavement Areas

Access Route	Roadway	Cut , cubic yards	Fill , cubic yards	Pavement Area, square feet	
				Roadway	Sidewalk
Southern Route Roadways 2 lanes, 40 feet wide (Valley Creek Rd), 28 feet wide (Baringer and Sloan)	Valley Creek Road to Baringer Road	10,000	8,000	24,000	3,000
	Baringer Road to Sloan Canyon Road	97,000	99,000	61,600	11,000
	Sloan Canyon Road to Hillcrest Parkway	90,000	116,000	126,000	22,500
	Hillcrest Parkway westerly connection to Sloan Canyon Road	10,000	4,000	11,20	2,000
	Romero Canyon Road south of Baringer Road (improvements for gated emergency access)	3,000	3,000	31,200	None
	subtotal	210,000	230,000	NA	NA
	Removal and Recompaction and 3% Bulking Factor	320,000	300,000	NA	NA
	Total	530,000	530,000	254,000	35,500
Total, 2 Routes		1,410,000	1,160,000	562,000	74,000
Scenario 2 Option B					
<i>Northern Route via Sloan Canyon Road and Canyon Hill Road</i>					
<i>Southern Route via Sloan Canyon Road, Baringer Road, Valley Creek Road</i>					
Northern Route Roadways 2 lanes, 40 feet wide	Canyon Hill Road	460,000	167,800	104,000	13,000
	Sloan Canyon Road, Canyon Hill to Quail Valley	94,000	59,000	108,000	13,500
	Mandolin Canyon Road (future), North of Canyon Hill Road to Tract 46443	146,000	253,200	28,000	3,500
	Subtotal	700,000	480,000	NA	NA
	Removal and Recompaction and 3% Bulking Factor	230,000	200,000	NA	NA
	Total	930,000	680,000	240,000	18,300
Southern Route Roadways 2 lanes, 40 feet wide (Valley Creek Rd), 28 feet wide (Baringer and Sloan)	Valley Creek Road to Baringer Road	10,000	8,000	24,000	3,000
	Baringer Road to Sloan Canyon Road	97,000	99,000	61,600	11,000
	Sloan Canyon Road to Hillcrest Parkway	90,000	116,000	126,000	22,500
	Hillcrest Parkway widen 400 feet to Sloan Canyon Road	10,000	4,000	11,20	2,000
	Romero Canyon Road south of Baringer Road (improvements for gated emergency access)	3,000	3,000	31,200	None
	subtotal	210,000	230,000	NA	NA
	Removal and Recompaction and 3% Bulking Factor	320,000	300,000	NA	NA
	Total	530,000	530,000	254,000	35,500
Total, 2 Routes		1,460,000	1,210,000	494,000	53,800

¹ All soil cut and fill would be between roadway sites or between the school site and a roadway site; all imported and exported soil would remain within the overall project site.

Note: All grading and soil amounts are in cubic yards; pavement areas are in square feet

Total Grading

Total grading quantities are shown below in Table 4-7. All subtotals in Table 4-8 include removal and recompaction (R&R) and a 3 percent bulking factor (or bulking and shrinkage factor).

4. Project Description

Table 4-7
Total Estimated Grading

Area	Cut	Fill
Project Site		
Landslide Areas	900,000	60,000
School Campus including on-site roadways	2,700,000	3,940,000
Total including removal and recompaction and 3% combined bulking/shrinkage factor	4,850,000	5,100,000
Offsite Access Roads		
All quantities include removal and recompaction and 3% bulking factor		
Scenario 1 Option A	880,000	630,000
Scenario 1 Option B	930,000	680,000
Scenario 2 Option A	1,410,000	1,160,000
Scenario 2 Option B	1,460,000	1,210,000
Total		
All quantities include removal and recompaction and 3% bulking and bulking/shrinkage factors		
Scenario 1 Option A	5,730,000	5,730,000
Scenario 1 Option B	5,780,000	5,780,000
Scenario 2 Option A	6,260,000	6,260,000
Scenario 2 Option B	6,310,000	6,310,000
Note: Numbers are in cubic yards.		

Improvement of Romero Canyon Road for use as a gated emergency access road would involve some grading and paving for widening the road to 24 feet wide. Grading for improvement of that part of Romero Canyon Road would involve 3,000 cubic yards each of cut and fill; 31,200 square feet of new pavement would be built.



Construction Equipment

Construction equipment anticipated for site clearing, grading, and project construction is listed in Table 4-8.

4. Project Description

Table 4-8 Construction Equipment	
Equipment	Number
Site Preparation/Clearing	
Grader	1
Dozer	3
Loader	1
Dump Trucks	2
Water Trucks	2
Grading	
Scraper	8
Dozer	5
Blade	2
Loader	1
Compactor	2
Water Truck	4
Trenching and Utilities	
Excavator	2
Loader	2
Building Construction	
Crane	1
Forklift	2
Loader	1
Backhoe	1
Rough Terrain Forklift	2
Concrete Truck	2
Concrete Pump	1
Water Truck	1
Generators	3
Paving	
Paver	1
Roller	2
Concrete Truck	8
Concrete Pump	1
Truck (Asphalt) S-10	8
Water Truck	2

Waste Management

To ensure optimal diversion of solid resources generated by a project, the District will require its contractors to recycle waste materials generated during demolition (green waste) and construction (construction waste) to minimize disposal in landfills.

4.7 INTENDED USES OF THE EIR

This EIR addresses various actions by the District and others to adopt and implement the proposed project. It is the intent of the EIR to enable the District, other responsible agencies, and interested parties to evaluate the environmental impacts of the proposed project, thereby enabling them to make informed decisions with respect to the requested entitlements.

4. Project Description

As required by CEQA Guidelines, this section provides, to the extent the information is known, a list of the agencies that are expected to use the EIR in their decision making and a list of permits and other approvals required to implement the project.

Lead Agency

The EIR provides a through environmental review for the whole of the proposed project, including planning, site clearance, demolition, and grading of the site and roads; construction of the buildings, associated facilities and roads; and the ongoing operation of the education center and associated school programs in accordance with CEQA requirements. The CEQA document (Final EIR) must be certified by the William S. Hart Union High School District Governing Board as to its adequacy in complying with the requirements of CEQA before taking any action on the proposed project. The board will consider the information in the Final EIR before making a decision to approve or deny the proposed project.

In accordance with Government Code Section 53094, the William S. Hart Union High School District Governing Board plans to adopt a resolution exempting the County of Los Angeles General Plan and zoning designation for the proposed Castaic High School project. The Governing Board will then provide proper notice to the County of Los Angeles.

In order to implement the proposed project, the Governing Board must take the following actions:

- Adopt a resolution exempting the site from County of Los Angeles General Plan and zoning restrictions
- Certify the Castaic High School EIR
- Adopt Findings of Fact that makes findings on whether the adverse environmental effects have been substantially reduced
- Adopt a Statement of Overriding Considerations for all significant unavoidable environmental impacts
- Adopt a Mitigation Monitoring and Reporting Program to ensure that the mitigation measures and project revisions identified in the EIR are implemented
- Approve the Castaic High School project



Responsible Agency

A public agency other than the lead agency that has discretionary approval power over a project is known as a “responsible agency,” as defined by CEQA Guidelines, Section 15381. The anticipated approvals required for this project are shown in the table below.

4. Project Description

Lead Agency	Action
Wm. S. Hart Union High School District	• Certification of EIR • Adoption of the Mitigation Monitoring and Reporting Program • Adoption of the Findings of Fact • Approval or denial of the project
Responsible Agencies	Action
US Army Corps of Engineers (ACOE)	• 404 Permit, Discharge of Dredged or Fill Material
California Department of Toxic Substances Control (DTSC)	• Determination of “No Further Action” (approved September 19, 2011)
California State Allocation Board (SAB)	• Approval of Funding
California Department of General Services, Office of Public School Construction (OPSC)	• Approval of Funding
California Department of General Services, Division of State Architect (DSA)	• Approval of Construction Drawings
California Department of Fish and Game (CDFG)	• 1602 permit: Streambed Alteration Agreement
Regional Water Quality Control Board – Los Angeles-Region 4 (LARWQCB)	• NPDES permit; issuance of waste discharge requirement; construction stormwater runoff permits; Section 401 Water Quality Certification
South Coast Air Quality Management District (SCAQMD)	• Rule 201: Permit to Construct
Los Angeles County Fire Department (LACFD)	• Approval of Emergency Access Plan, fire hydrants, fuel modification zones
Los Angeles County Department of Public Works	• Approval of offsite work plans, construction traffic plan, storm drains, grading plan, and road work
Local Agency Formation Commission of Los Angeles County (LAFCO)	• Approval of Water District annexation
Newhall County Water District	• Approval of annexation, water tank, booster pumps and water lines
Los Angeles County Waterworks District No. 36	• Approval for leaving the County water district
Santa Clarita Valley Sanitation District	• Approval of Annexation into SCVSD
Reviewing Agencies	
State of California	Office of Historic Preservation California Highway Patrol Department of Transportation (Caltrans) Resources Agency Department of Conservation Department of Fish and Game Native American Heritage Commission
Regional Agencies	Los Angeles County Metropolitan Transportation Authority Southern California Association of Governments
County of Los Angeles	Parks and Recreation Department Department of Regional Planning

4. Project Description

Conceptual Site Plan



--- Site Boundary

Source: Ruhnau Ruhnau Clarke 2012

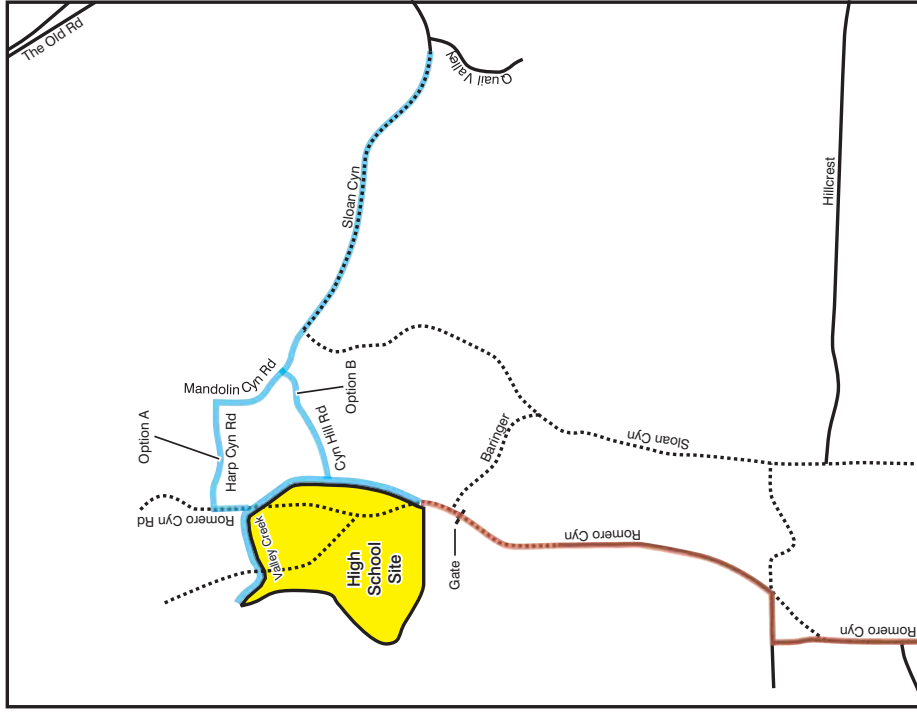
Castaic High School Draft EIR

4. Project Description

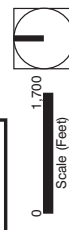
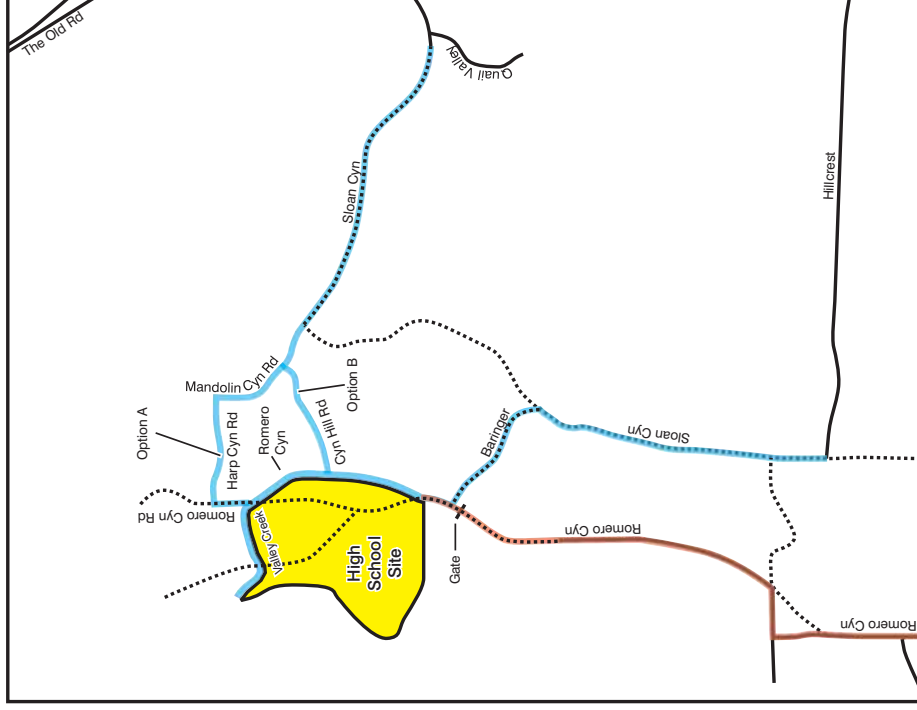
This page intentionally left blank.

School Access Roadways

Scenario 1



Scenario 2



Proposed School Access Road
Proposed School Emergency Access Only

Existing Roadway (Paved)
Existing Roadway (Dirt)

4. Project Description

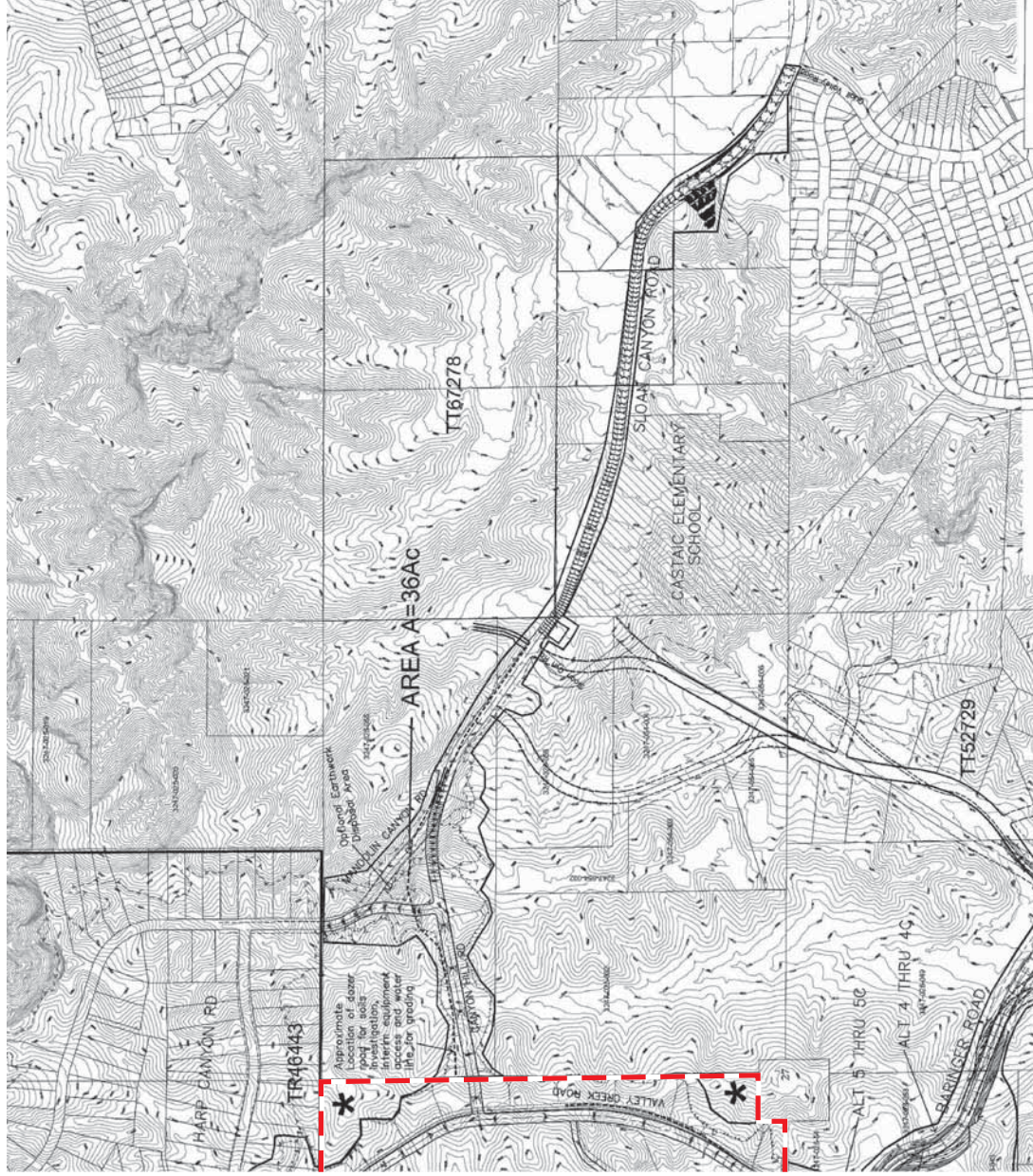
This page intentionally left blank.

4. Project Description

This page intentionally left blank.

4. Project Description

Grading Plan: Northern Access Roads



--- Site Boundary

Source: Sikand 2012

Castaic High School Draft EIR

0 1,000
Scale (Feet)



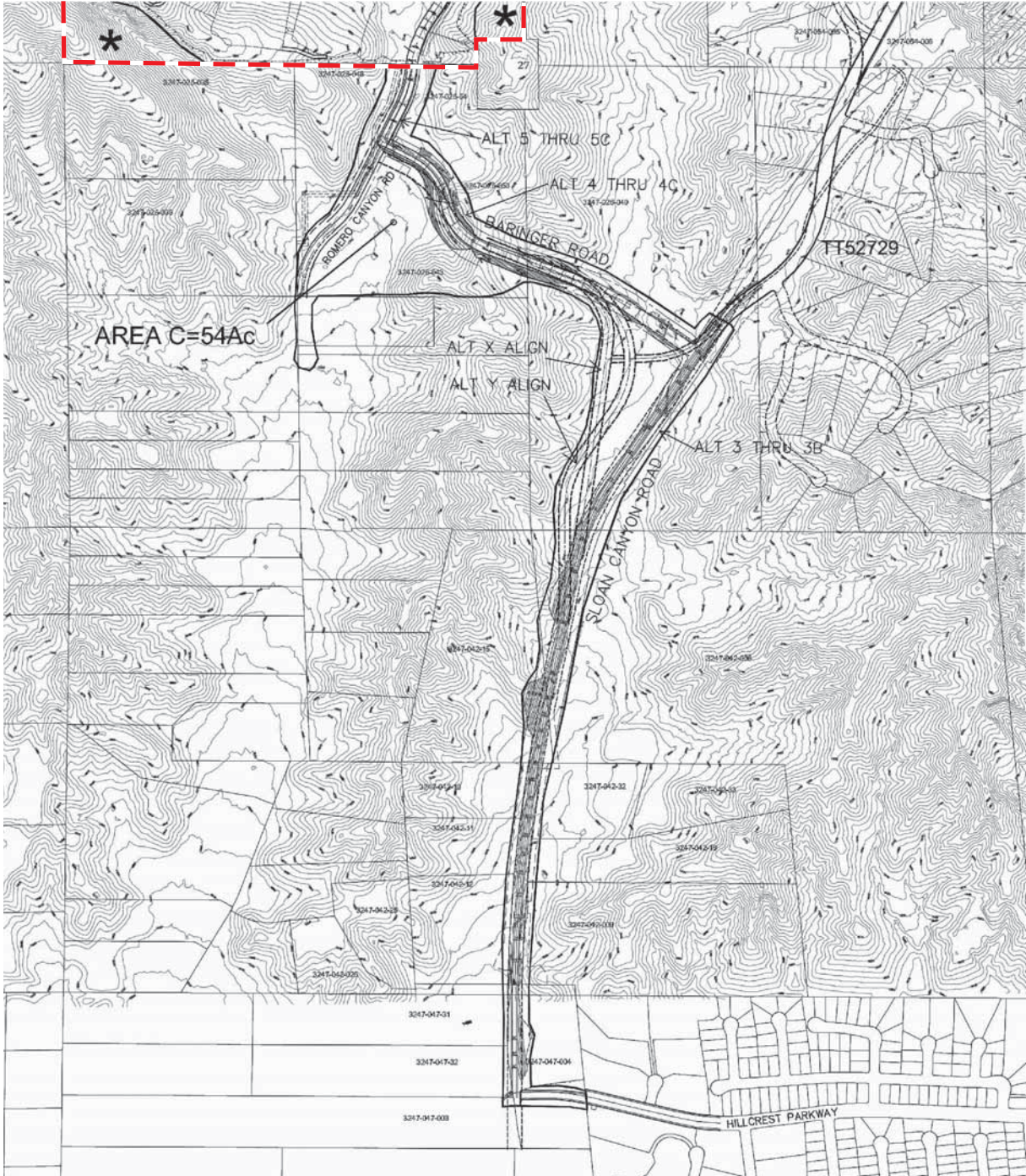
The Planning Center | DC&E • **Figure 4-4**

4. Project Description

This page intentionally left blank

4. Project Description

Grading Plan: Southern Access Roads



--- Site Boundary

0 1,000
Scale (Feet)



Source: Sikand 2012

Castaic High School Draft EIR

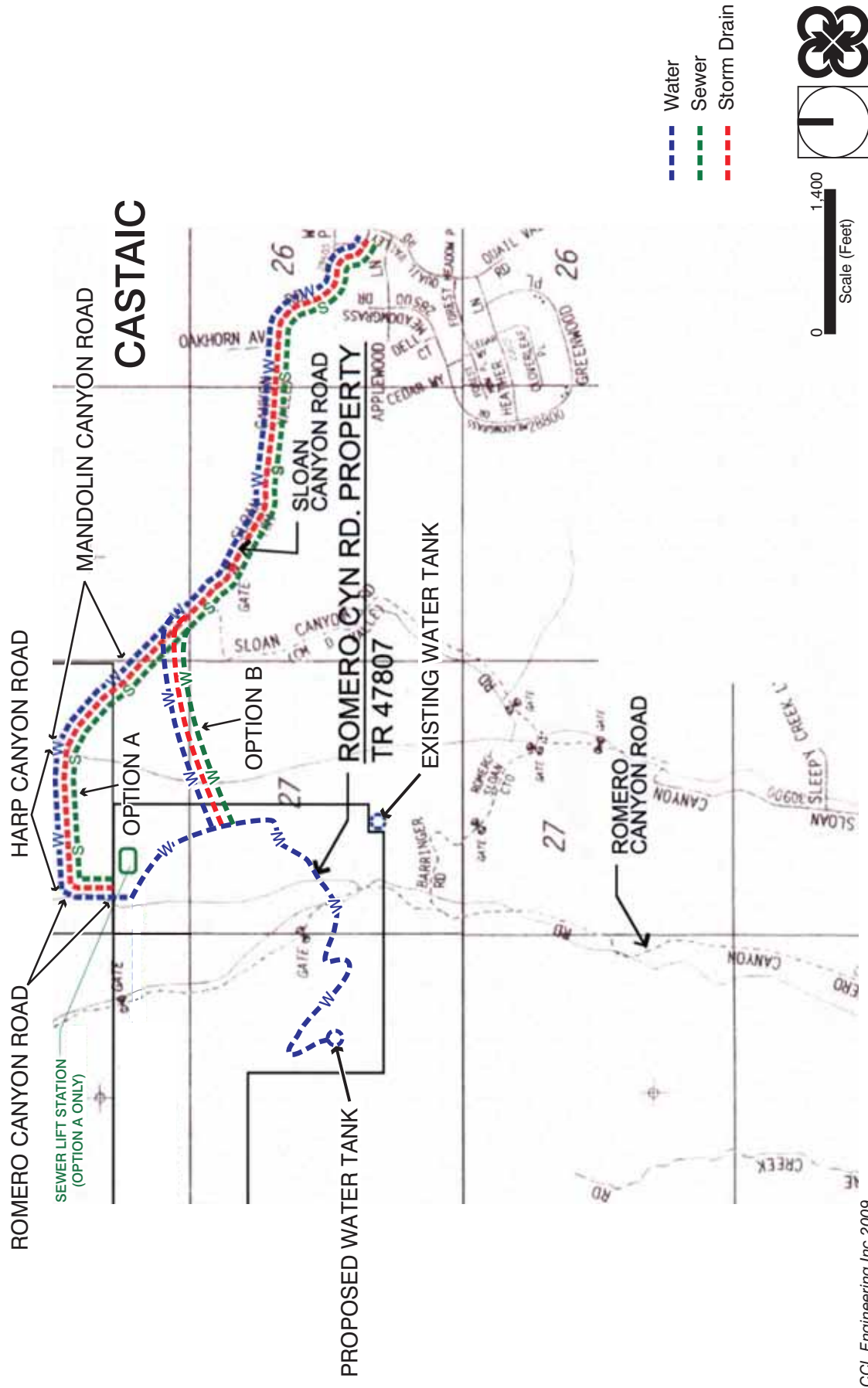
The Planning Center | DC&E • **Figure 4-5**

4. Project Description

This page intentionally left blank.

4. Project Description

Utility Plan



Source: CCL Engineering Inc 2009

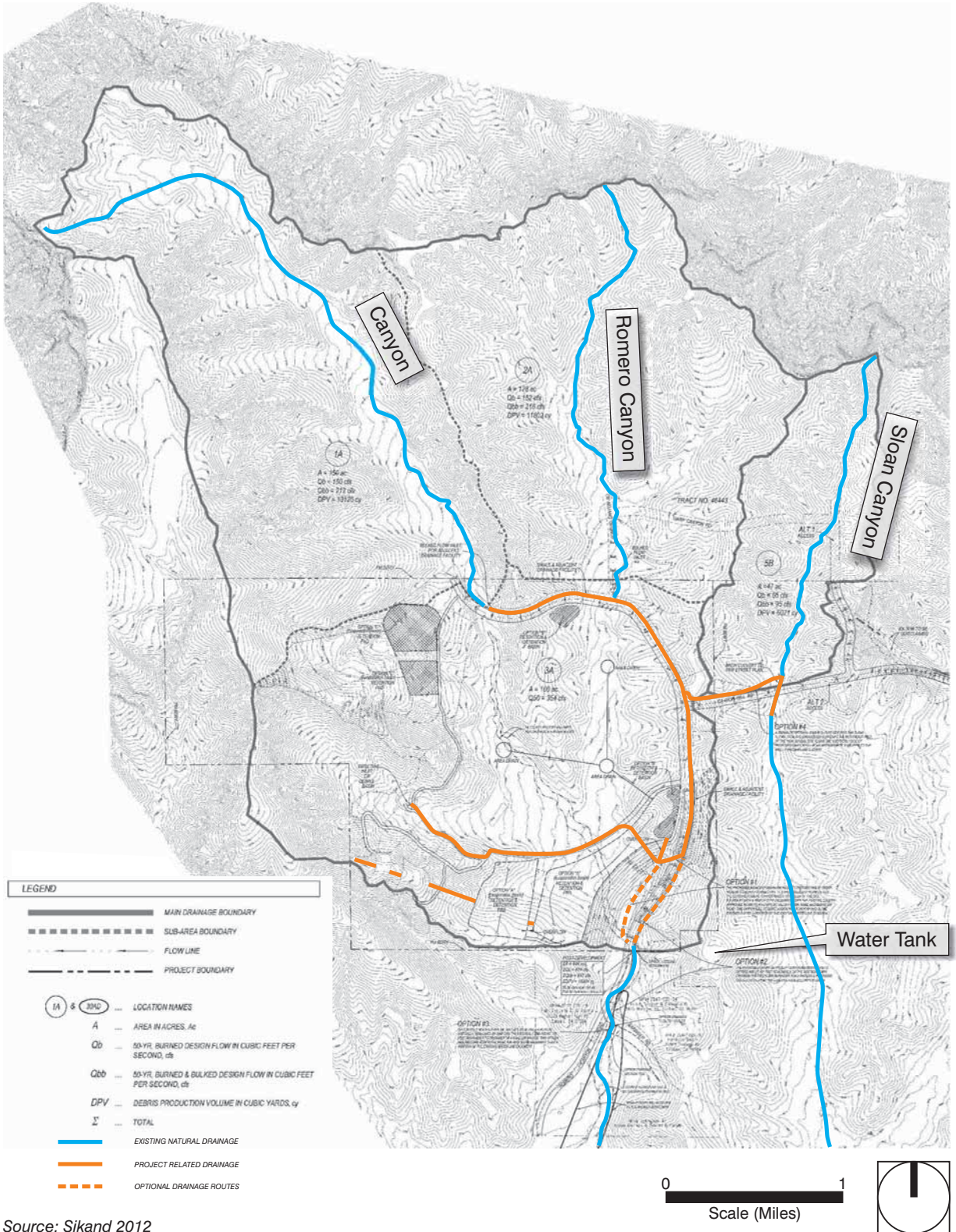
Castaic High School Draft EIR

4. Project Description

This page intentionally left blank.

4. Project Description

Area Drainage Plan



Source: Sikand 2012

Castaic High School Draft EIR

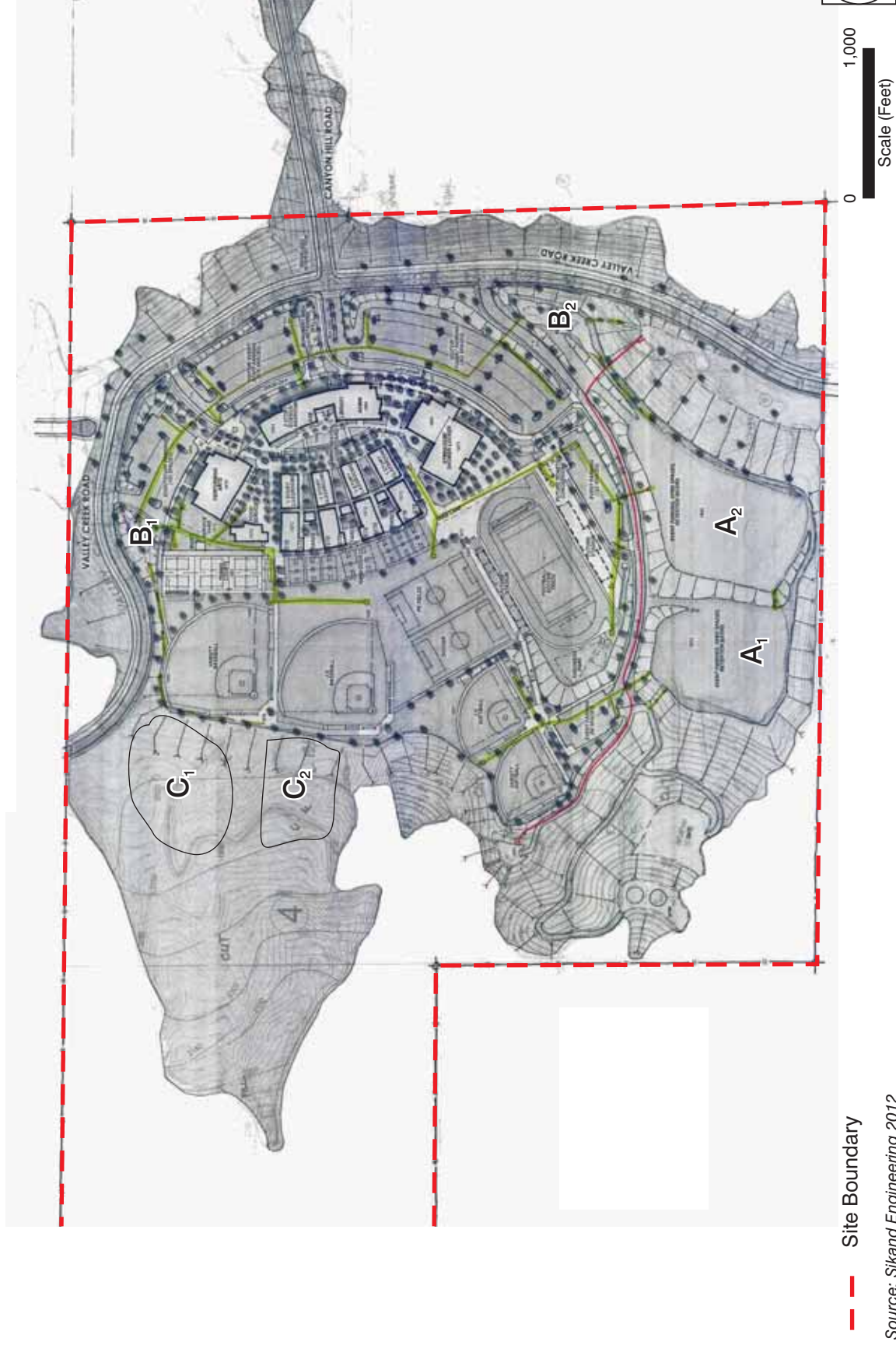
The Planning Center | DC&E • **Figure 4-7**

4. *Project Description*

This page intentionally left blank.

4. Project Description

Campus Drainage Plan

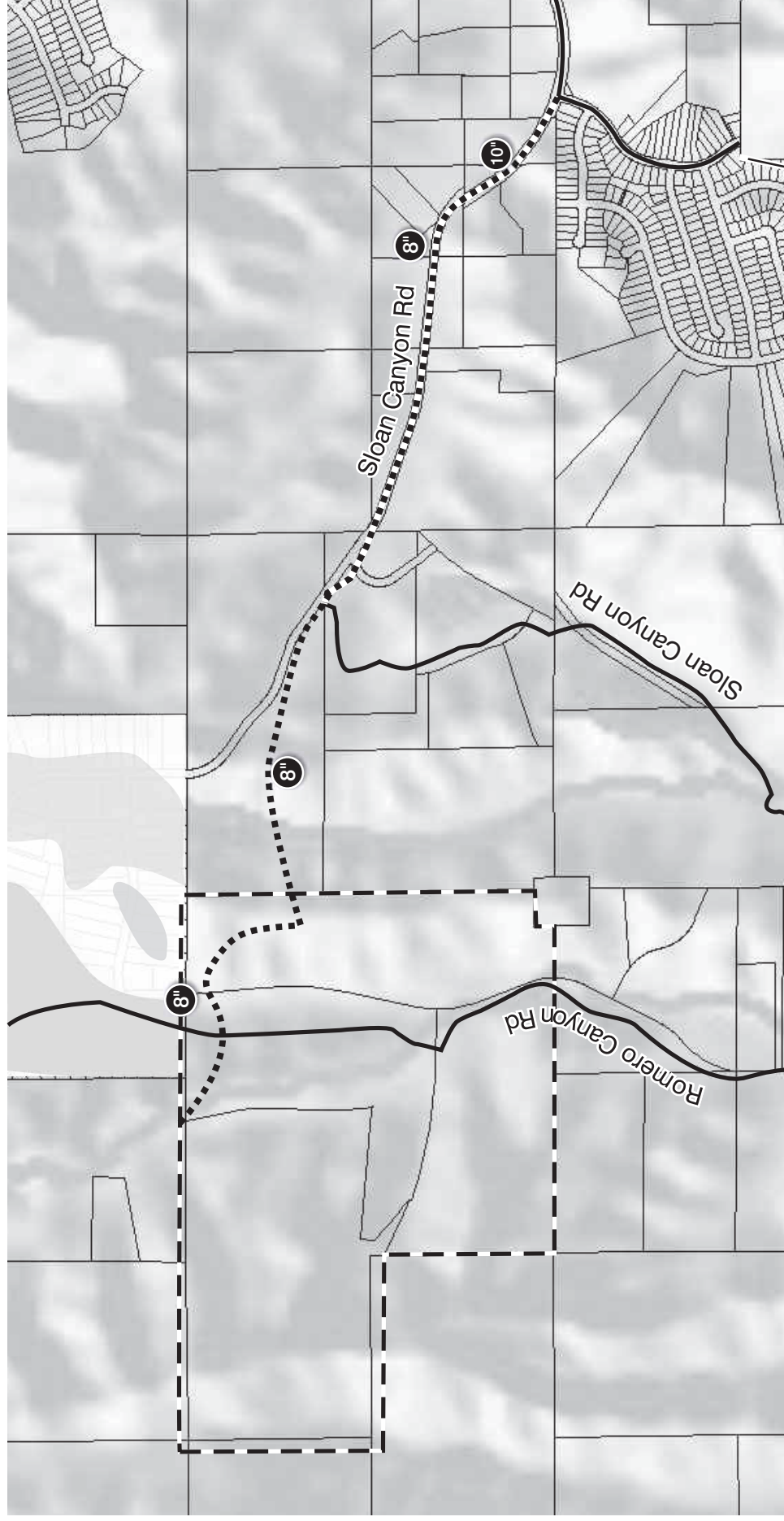


4. *Project Description*

This page intentionally left blank.

4. Project Description

New Sewer Plan

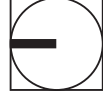


--- Project Site

..... New Sewers

8" Sewer Diameter (inches)

0 1,000
Scale (Feet)



Source: Sikand 2012

Castaic High School Draft EIR

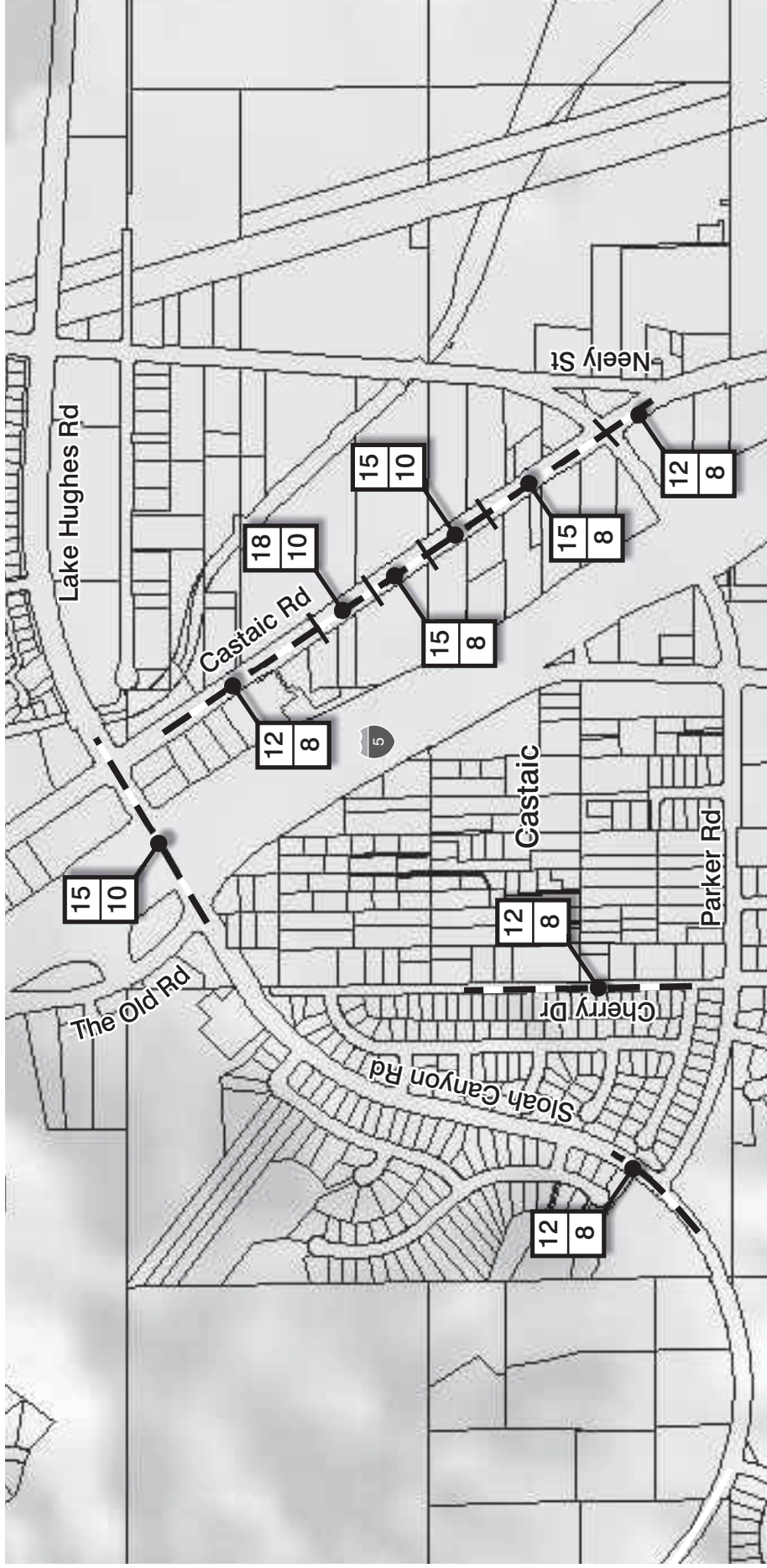
The Planning Center | DC&E • Figure 4-9

4. *Project Description*

This page intentionally left blank.

4. Project Description

Upgraded Sewer Plan



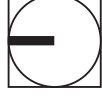
Boundary Between
Segments of
Upgraded Sewer

Upgraded Sewers

Upgraded Diameter, Inches
Existing Diameter, Inches

15
10

0 1,000
Scale (Feet)



Source: Sikand 2012

Castaic High School Draft EIR

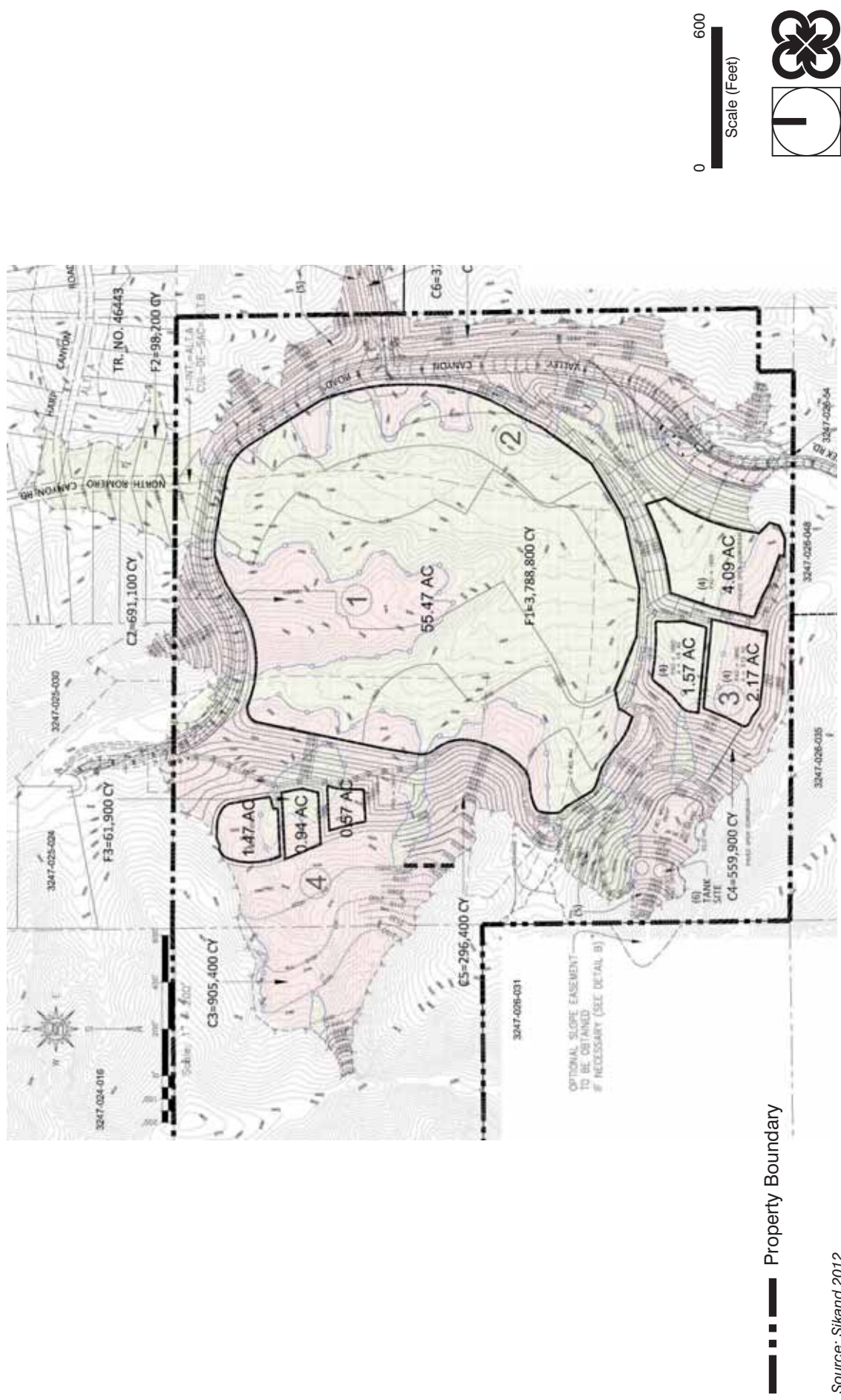
The Planning Center | DC&E • Figure 4-10

4. Project Description

This page intentionally left blank.

4. Project Description

Grading Plan



Source: Siskand 2012

Castaic High School Draft EIR

4. Project Description

This page intentionally left blank

5. *Environmental Analysis*

5.1 *AESTHETICS*

This section describes the regional visual character surrounding the proposed project site, the visual resources unique to the project site, the views of the project site from key viewpoints, and the changes in those views that would result from the project. Because a person's reaction and attachment to a given viewshed are subjective, visual changes inherently affect viewers differently. Accordingly, analysis in this section is based on the qualitative changes that would occur to the visual and aesthetic resources.

A number of federal resource agencies have approved methodology for assessing aesthetic impacts. This includes the Federal Highway Administration, the Bureau of Land Management, the United States Forest Service, and other regulatory agencies (FHWA 1981, 1988; BLM 1978; USFS 1978, 1995). All of these methods produce similar results. In addition, the California Department of Transportation lists scenic highways that are officially designated or considered eligible in the state scenic highway system. Aesthetics and lighting policies are included in the Los Angeles County Municipal Code and the Los Angeles County General Plan as described under "Regulatory Framework," below.

All figures are located at the end of this section.

5.1.1 *Environmental Setting*

Terminology

Aesthetics

Under CEQA, the term "aesthetics" pertains to the perceived visual quality of an area characterized by one or more visual elements such as open space, scenic views, or architecture type. Aesthetically significant features can occur in a diverse array of environments, from urban centers to rural agricultural lands to natural woodlands. Scenic resources, including highways, historic buildings, and natural features, are typically described in city and county general plans.

A project can have significant impacts on visual quality if it negatively affects the aesthetically significant features by altering them in part or wholly, e.g., by destroying vegetation integral to a scenic vista or by constructing a building in an architectural style that conflicts with an existing historic setting.

Identifying a project area's visual resources and conditions involves three steps:

- 1) objective identification of visual features of the landscape
- 2) assessment of the character and quality of those resources relative to overall regional visual character
- 3) assessment of the potential significance of features in the landscape to the people who see them and their sensitivity to the proposed changes to those features.



5. Environmental Analysis

AESTHETICS

Viewpoints are land uses that are commonly seen by regulatory agencies as visually sensitive. Potentially sensitive viewpoints would include any scenic vistas, scenic highways, residential views, public parks, recreational areas, and/or important historic locations from which the project could potentially be visible.

Scenic vista is an area that is designated, signed, and accessible to the public for the express purposes of viewing and sightseeing. This includes any such areas designated by a federal, state, or local agency.

Scenic highway is any stretch of public roadway that is designated as a scenic corridor by a federal, state, or local agency.

Aesthetic value refers to the perception of the natural beauty of an area, as well as to the elements that create or enhance its visual quality. While aesthetic value is subjective, it is one of the elements that contribute to people's experience of an area. Most communities identify scenic resources as an important asset, although what is considered "scenic" may vary according to its environmental setting. For example, a valley community has distinctive scenic resources that differentiate it from a coastal or mountain community. (DRP 2010)

Scenic quality can best be described as the overall impression that an individual viewer retains after driving through, walking through, or flying over an area.

Scenic resources can include natural open spaces, topographic formations, and landscapes that contribute to a high level of visual quality. These are significant resources that can be maintained and enhanced to promote a positive image in the community. Many people associate natural landforms and landscapes with scenic resources such as lakes, rivers and streams, mountain meadows, and oak woodlands. These areas, generally felt by residents to possess natural beauty, provide a positive visual experience and help to define the aesthetic character of an area. Scenic resources can also include man-made open spaces and the built environment, such as parks, trails, nature preserves, sculpture gardens, and similar features.

Aesthetic compatibility is the proposed project compared to the context of the existing setting, considering such factors as scale, mass, proportion, orientation, typical construction materials, and landscaping and buffering.

Viewer response is a combination of viewer exposure and viewer sensitivity.

Visual character is the look and feel of an area and the characteristics of the natural and artificial landscape features that contribute to it. Visual character is influenced by geologic, hydrologic, botanical, wildlife, recreational, and urban features. Urban features include those associated with landscape and development, including roads, utilities, structures, earthwork and other human activities. The perception of visual character can vary significantly seasonally, even hourly, as weather, light, shadow, and elements that compose the viewshed change. The basic components used to describe visual character for most visual assessments are the elements of form, line, color, and texture of the landscape features (USFS 1995; FHWA 1988). The appearance of the landscape is described in terms of the dominance of each of these components.

Visual quality is evaluated using the well-established approach to visual analysis adopted by the Federal Highway Administration, employing the concepts of vividness, intactness, and unity, as described below (FHWA 1988).

- **Vividness** is the visual power or memorability of landscape components as they combine in striking or distinctive visual patterns. Examples of high vividness include views of areas such as the Grand Canyon, the ocean, or an urban skyline.

5. Environmental Analysis

AESTHETICS

- **Intactness** is the visual integrity of the natural and artificial landscape and its freedom from encroaching elements. Intactness can be present in well-kept urban and rural landscapes as well as in natural settings. Intactness relates to the physical setting. For example, in a natural setting, it is the freedom from development or infrastructure; in a rural setting, it is the freedom from urban influences; and in an urban/suburban setting, it is the freedom from uses such as industrial smokestacks in an area with office buildings or intensive commercial development in a residential area.
- **Unity** is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the artificial landscape. Examples of high unity would include a well-maintained master-planned community, a mixed-use downtown development, or a coastal fishing village.

Viewer exposure and sensitivity is based on the visibility of resources in the landscape, proximity of viewers to the visual resource, elevation of viewers relative to the visual resource, frequency and duration of views, number of viewers, and type and expectations of individuals and viewer groups.

The importance of a view is related in part to the position of the viewer to the resource; therefore, visibility and visual dominance of landscape elements depend on their placement within the viewshed.

- **Viewsheds** constitute the range of vision in which scenic resources may be observed. They are defined by physical features that frame the boundaries or context of one or more scenic resources. A region's topography can lend aesthetic value through the creation of public view corridors of ridgelines and through the visual backdrop created by mountains and hillsides. Viewsheds and scenic vistas may include views of both natural and built environments and are considered important scenic resources. (DRP 2010)



To identify the importance of views of a resource, a viewshed must be broken into distance zones of foreground, middleground, and background. Generally, the closer a resource is to the viewer, the more dominant it is and the greater its importance to the viewer.

- **Foreground zones** include views of the site from a close distance where the proposed project would dominate the entire view. These vantage points are generally up to one-quarter mile from the site depending on the scale of the project, surrounding topography (which determines perspective) and other prominent physical features in the project vicinity.
- **Middle-ground zones** include views of the site from a moderate distance where the proposed project would partially dominate the view. These views are generally located between one-quarter mile and two miles from the site.
- **Background zones** include views of the site from a long distance, typically horizon views that are part of the overall visual composition of the area. These views are generally farther than two miles from the project site.

Viewer sensitivity relates to the extent of the public's concern for a particular viewshed. Sensitive viewers are generally associated with land uses such as residential, school, church, and recreation. High sensitivity exists when the affected views are rare, unique, or in other ways special to the region or locale. Visual sensitivity is generally higher for views seen by people who are driving for pleasure; people engaging in recreational activities such as hiking, biking, or camping; and homeowners. Residential viewers typically have extended viewing periods and are concerned about changes in the views from their homes; therefore,

5. Environmental Analysis

AESTHETICS

they are generally considered to have high visual sensitivity. Viewers using recreation trails and areas, scenic highways, and scenic overlooks are also usually assessed as having high visual sensitivity.

Medium sensitivity exists when the affected views are secondary in importance or are similar to others in the region or locale. Low sensitivity exists when the public can be expected to have little or no concern about changes in the landscape. Sensitivity tends to be lower for views seen by people driving to and from work or as part of their work (USFS 1995; FHWA 1988). Commuters and nonrecreational travelers typically have fleeting views and tend to focus on traffic, not on surrounding scenery; therefore, they are generally considered to have low visual sensitivity.

Viewer exposure is a function of the number of viewers, the number of different views that can be seen, the distance from the site to the viewers, and the viewing duration. Judgments of visual quality and viewer response must be made based on a regional frame of reference. The same landform or visual resource appearing in different geographic areas could have a different degree of visual quality and sensitivity in each setting. For example, a small hill may be a significant visual element on a flat landscape but have very little significance in mountainous terrain.

Light and Glare

Light and glare impacts are determined through a comparison of the existing site (no light sources) with the project-related lighting. Two major causes of light pollution are glare and spill light.

Glare is light that causes visual discomfort or disability or a loss of visual performance. It occurs when a person's eyes see a bright object against a dark background. Glare can be generated by building exterior materials, surface paving materials, and vehicles traveling or parked on roads and driveways. Any highly reflective façade material is a concern because buildings can reflect bright sunrays.

Spill light is light from a lighting installation that falls outside the boundaries of the property on which it is sited. Spill light can interfere with nighttime views; spill light reaching into residential windows can interfere with sleep.

Artificial sky glow is the brightening of the night sky attributable to human-created sources of light.

Light trespass is spill light that, because of quantitative, directional, or type of light, causes annoyance, discomfort, or loss in visual performance and visibility.

Luminaire ("light fixture"): is a complete lighting unit consisting of one or more electric lamps, the lamp holder, reflector, lens, diffuser, ballast, and/or other components and accessories.

Shielding:

Fully shielded. A luminaire emitting no light above the horizontal plane.

Shielded. A luminaire emitting less than 2 percent of its light above the horizontal plane.

Partly shielded. A luminaire emitting less than 10 percent of its light above the horizontal plane.

Unshielded. A luminaire that may emit light in any direction.

5. Environmental Analysis

AESTHETICS

Luminance is the amount of light emitted in a given direction from a surface by the light source or by reflection from a surface. The unit of measurement is candela per square meter.

Foot-candle is a unit of measure for quantifying the intensity of light falling on an object. **Lumen** is a unit of measure for quantifying the amount of light energy emitted by a light source. In other words, foot-candles measure the brightness of the light at the illuminated object, while lumens measure the power of the light radiated by the light source.

Regional

The project site is within the interior basin of Los Angeles County just to the north of the community of Val Verde. The region is surrounded by several significant mountain ranges, including the San Gabriel, Santa Susana, and Sierra Pelona Mountains, in addition to several canyons, valleys, and the Santa Clara River and Castaic Creek beds. The nearest topographical landmark is Loma Verde Peak, 11.5 miles northwest of Newhall and within one mile west of the site. The next-nearest prominent mountain peaks are to the north of the project area in the Angeles National Forest, including Townsend Peak (elevation 3,184 feet) and Whitaker Peak (elevation 4,151 feet). Local topography consists of narrow valleys and narrow ridgetops, separated by exceptionally steep and highly eroded slopes. Ridges and valleys are dendritic and narrow, with evidence of several landslides apparent in the site vicinity.¹

Several small, unnamed creeks traverse the project area. The project area slopes southward from 1 to 5 percent in the canyons, with water drainage generally flowing in a south to southeasterly direction, toward Hasley Canyon. From Hasley Canyon the water flows east to Castaic Creek and then south into the Santa Clara River.

The land immediately surrounding the site consists of private lands; the U.S. Forest Service oversees the nearest public land, approximately three miles to the northwest. Various rural residences surround the site, and more dense residential development is to the east. North and west of the site the land is mostly undeveloped. Small residential developments lie to the west and around the southern roads of the site. The project site is not within any critical habitat units for federally listed species or any other designated conservation area.

Local

As shown in Figure 3-4, *Aerial Photograph*, the project site consists of hills, steep ridges, and canyons. The property was burned during the Castaic Fire in 2001. This burn has left many of the steep slopes susceptible to sheet erosion. Heavy rains in 2005 caused deep incising of canyons and formed new gullies on the exposed slopes. A water tank is just outside the project limits on the southeast corner of the property. Additional disturbances include various dirt roads that cross through the property and scattered trash. The location and direction of site photographs is shown on Figure 3-4, and project site photographs are on Figures 3-5, 3-6, 3-7, 3-8, and 3-9.

The site is largely undeveloped rolling hills, rugged steep slopes, open valleys, canyons, and dirt roads. The elevation difference across the project site is about 650 feet, ranging from about 1,730 feet above mean sea level (amsl) near the south-central portion to 2,380 feet amsl near the northwestern portion. Natural drainage channels extend north-south through the property, and two dry streambeds are in the two main canyons. All of the onsite streams are seasonally intermittent and have water only during and after rain.

¹ Dendritic means branched, resembling a tree or veins of a leaf.



5. Environmental Analysis

AESTHETICS

Natural slopes range from gentle near the valley areas to nearly vertical in hillside areas. There are indications of large landslide complexes in the hillside areas, with the majority of the landslides on east-facing slopes. The geologic materials exposed at the site consist of loose sand, gravel, clays, and landslide deposits, with some bedrock outcrops. Most of the site and surroundings have natural vegetation; unvegetated areas include dirt roads and streambed areas. The site contains chaparral, California sagebrush, live-oak woodland, grassland, and disturbed plant communities.

Visual Resources

Ridgelines, canyons, and woodlands are all specified as important visual resources in the Santa Clarita Valley Area Plan (DRP 2010). Mountains and ridgelines provide a sense of form and containment. Canyons as well as mountains provide a backdrop to the urban environment and enable residents to experience the natural environment. All three types of scenic resources—ridgelines, canyons, and woodlands—exist on the project site. In addition, some rock outcroppings are scattered throughout the site.

Three ridgelines on the project site are designated Primary Significant Ridgelines by the Castaic Area Community Standards District (see Figure 5.1-1, *Significant Ridgelines*) (DRP 2012c). All three ridgelines extend north-south: one is in the western part of the site; the second passes partway across the site forming part of the east slope of Romero Canyon; and the third traverses the eastern edge of the site. The latter two slopes are within the main campus site.

Viewer Groups

The primary viewer groups in the region include residential viewers, recreational viewers (i.e., motorists, bicyclists, equestrians, and pedestrians), and roadway travelers (those traveling to and from area homes, not related to recreational activity).

Residential Viewers

Existing residential viewers and roadway travelers going to and from homes are the viewers with the most access to the project site. Several residential properties are within a one-mile radius of the project site; however, only 10 are within viewing range (0.25 mile).

In all cases, residential views toward the project area are likely to be high in frequency (daily). However, in general, the total number of viewers is considered low. Depending on a viewer's activity, the duration of the view would vary between short (e.g., passing by a window) and fairly long (e.g., sitting in the yard). Therefore, based on the type of viewer, frequency, and duration, residential viewers would have high viewer sensitivity.

Foreground. Due to the steep, undulating topography in the area, views of the site tend to be fairly localized and are typically in the foreground of the viewshed. There are about 10 residential properties to the south, east, and north of the site. No other existing developed land uses are within one-quarter mile of the school site. Views of the site from the surrounding residential properties consist of canyons, valleys, and several ridges.

Middle Ground. The project site is not visible from residential properties in the middle ground (0.25 to 2 miles) vantage points due to the obstructing topography and curvature of the canyons. The site is not visible from residential tracts near Quail Valley Road and Hillcrest Parkway due to intervening ridges. The project site is not visible from I-5 (approximately 1.5 miles northeast) due to intervening ridges and structures, and,

5. Environmental Analysis

AESTHETICS

in some places, due to embankments along the freeway. However, recreational viewers can see the site from most of the high hills and ridges.

Background. Vantage points from which the project site is visible from distances of over two miles include the eastern slopes of the Castaic Creek Valley. Looking west from Lake Hughes Road just south of Castaic Lake Dam, numerous ridgelines can be seen, but no distinguishing characteristics are visible from that distance.

Recreational Viewers

Although there are no officially designated or maintained hiking or biking trails in the area, the dirt roads are used by several recreational groups. Recreational viewers may include bicyclists, hikers, horseback riders, and off-highway vehicle drivers. Representative viewpoints were identified for a qualitative analysis of visual resources within the project site. These viewpoints are shown in Figures 3-5 through 3-9; a photo location key is on Figure 3-4. Recreational viewers tend to have more expansive views that range in distance from foreground to panoramic background views depending on elevation. Recreational viewers throughout the area tend to view their surroundings less frequently than residential viewers; thus, the frequency of views is moderate. Their views are also seasonal, with most people avoiding the heat of summer and rain in winter. Additionally, the duration of views is low when viewers are engaged in other activities. Although the number of recreationists varies depending upon the activity, the number of viewers overall at any given location is low to moderate. Therefore, based on a low to moderate number of viewers, moderate frequency, and the low duration, recreational views of the area would have moderate viewer sensitivity.

Existing Light and Glare

There are no existing sources of light or glare from lights on the site, and no street lights on the existing dirt roads on or near the site. Offsite light sources consist of safety and security lights at scattered rural residences.

Regulatory Framework

County of Los Angeles has three regulatory document that cover all or portions of the project site.

Santa Clarita Valley Area Plan

The Santa Clarita Valley Area Plan of the County of Los Angeles General Plan identifies the desire to promote compatible land uses in rural areas. The plan recommends enhancement of visual quality through implementation of several goals and policies relating to aesthetics, including:

- 1) use of buffers to mitigate incompatible land uses
- 2) integration of physical development in rural areas with the natural setting
- 3) establishment of standards on appearance and design within the Santa Clarita Valley
- 4) use of landmarks and other topographic features as a focus for developing a community image
- 5) promotion and enhancement of rural community character in rural areas



5. Environmental Analysis

AESTHETICS

The goal of these guidelines is to ensure a consistent and high quality standard of development throughout the Santa Clarita Valley.

Castaic Area Community Standards District

The Castaic Area Community Standards District (CSD) is a regulatory district under the County of Los Angeles Municipal Code (Title 22, Planning and Zoning, “supplemental districts”). This district defines the Castaic area of influence within Los Angeles County. The CSD defines how Castaic should grow and sets up guidelines for developers, county officials, and citizens in managing that growth. It establishes the official boundary for Castaic in its relation to the surrounding communities. It identifies several ridgelines and trails in the area to be preserved and requires minimum lot sizes for new development (DRP 2012c).

Rural Outdoor Lighting District

The project site is within the proposed Rural Outdoor Lighting District. The County of Los Angeles is in the process of adopting a Rural Outdoor Lighting District Ordinance.

This ordinance would amend Title 22 (Planning and Zoning) of the County Code to establish a Rural Outdoor Lighting District for areas of unincorporated Los Angeles County. The proposed ordinance would establish the district with regulations that would conserve energy and resources and promote dark skies for the enjoyment and health of humans and wildlife, while permitting reasonable uses of outdoor lighting for nighttime safety and security. The regulations include limitations on allowable light trespass, fully shielding outdoor lighting, maximum heights of fixtures, street lighting in rural areas, outdoor recreation facilities, and signs. The Los Angeles County Code Section 22.44.500 et seq., upon approval by the County Board of Supervisors, would place regulations on outdoor lighting as follows (DRP 2012):

Application: Applies to all new lighting, major additions, replacement lighting, and resumption of use after abandonment.

Light Trespass: Outdoor lighting shall not cause light trespass. The following is considered light trespass: 1) over 0.5 foot-candle where the zoning on the adjacent parcel is a residential, open space, or agricultural zone, or public right-of-way; or 2) over 1.0 foot-candle where the zoning on the adjacent parcel is any other zone.

Shielding: All outdoor lighting shall be fully shielded. Fully shielded means that the top of the fixture is covered and the sides are covered to a point where light is projected below a horizontal plane.

Height Limits: Maximum height limits established to avoid light pollution and light trespass. Height limits for residential, agricultural, open space, and watershed zones is 20 feet, except each outdoor light fixture installed above 15 feet shall have an output rating of less than 400 lumens. Height limit for commercial zones is 30 feet and for industrial zones is 35 feet.

Hours of Operation: Outdoor lighting shall be turned off between the hours of 10 PM and sunrise. Where uses operate past 10 PM, lighting shall either be turned off within one hour after the close of business or dimmers shall be used.

Street Lighting: Street lights shall be installed at all roadway intersections and at driveways where the Director of Public Works indicates that a street light would be beneficial due to the proposed use of the property. Street lights will not be allowed on local residential streets unless required by Public Works. Street lights shall be placed the maximum distance apart with the minimum lumens allowable by Public Works.

5. Environmental Analysis

AESTHETICS

Outdoor Recreation Facilities: Lighting for playing fields shall be fully shielded and aimed so beams are all within the primary activity area and do not cause light trespass onto adjacent properties. Lights for recreational fields may be mounted up to 75 feet in height.

Signs: Outdoor lighting for all new signs shall be mounted on the top of the sign and be oriented downward and the lights shall be fully shielded.

Prohibited Lighting: These types of lighting are prohibited: drop-down lenses; mercury vapor lights; and searchlights, laser lights, or any other lighting that flashes, blinks, alternates, or moves.

Nonconforming Lighting: All outdoor lighting in use on the effective date of this ordinance that does not meet these requirements shall be removed or made to comply within six months of the effective date of this ordinance if such light causes light trespass or within three years of the effective date of this ordinance if such lighting does not cause light trespass.

5.1.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

AES-1	Have a substantial adverse effect on a scenic vista.
AES-2	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
AES-3	Substantially degrade the existing visual character or quality of the site and its surroundings.
AES-4	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.



5.1.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.1-1: THE PROJECT WOULD NOT AFFECT ANY SCENIC VISTAS. [THRESHOLD AES-1]

Impact Analysis: A scenic vista is an area that is designated, signed, and accessible to the public for the express purposes of viewing and sightseeing. This includes areas designated by a federal, state, or local agency. Although there are several locations in the area where recreational viewer can stop and look at the site and surroundings, there are no designated scenic vistas on or near the project site. Scenic vista impacts would be less than significant.

IMPACT 5.1-2: THE PROJECT WOULD NOT SUBSTANTIALLY DAMAGE SCENIC RESOURCES WITHIN A STATE SCENIC HIGHWAY. [THRESHOLD AES-2]

Impact Analysis: There are no designated state scenic highways in the area. The nearest state scenic highway is State Route 2 (SR-2), approximately 30 miles southeast of the project site (Caltrans 2007). Project development would not impact scenic resources within a state scenic highway. There are no designated local county scenic highways or corridors on or near the project site. Scenic highway impacts would be less than significant.

5. Environmental Analysis

AESTHETICS

IMPACT 5.1-3: THE PROPOSED PROJECT WOULD SUBSTANTIALLY ALTER THE EXISTING VISUAL CHARACTER OF THE SITE AND ITS SURROUNDINGS. [THRESHOLD AES-3]

Impact Analysis: The project would involve mass grading of approximately 250 acres, including campus, engineered slopes, and landslide removals next to the campus, and, depending on the access route, northern and southern access roads. Existing vegetation would be removed from all of the area to be graded. After completion of grading the slopes would be landscaped.

The project would replace the existing hills, canyons, and vegetation with buildings, parking lots, roadways, playfields, hardcourts, and possible stadium. Proposed buildings would range from one to three stories high. The campus would be about 1,985 feet amsl at the northwest corner, gradually declining to approximately 1,760 feet on the southeast edge of the overflow parking/retention area. Graded slopes would extend up to elevations of about 2,120 feet for the water tank near the southwest corner of the project site, and 2,300 feet for the landslide removal near the northwest corner. Grading and construction of the school and access roads would significantly alter the existing natural terrain and existing conditions.

The project would involve grading of up to 92 acres for construction of roadways. Two scenarios (Scenario 1 and 2) and two options for each scenario (Option A and B) are proposed for access roadways; the scenarios and options are described in Section 4.5.3, *Roadway Infrastructure*, and shown on Figure 4-2. Development of the eastern access route in Scenarios 1 and 2, via Sloan Canyon Road and Canyon Hill Road, or via Sloan Canyon Road, Mandolin Canyon Road, Harp Canyon Road, and North Romero Canyon Road, would involve grading of about 36 acres. Development of the southern access route in Scenario 2, via Sloan Canyon Road, Baringer Road, and Romero Canyon Road/Valley Creek Road, would involve grading of approximately 56 acres. Construction of Canyon Hill Road, if it is developed, would involve a cut through the ridge near the eastern site boundary.

Residential Viewers

Based on the type of viewer, frequency, and duration, residential viewers would have the highest viewer sensitivity of any viewer group. Therefore, this aesthetics analysis is focused on residential viewers.

The potential impacts associated with the project are evaluated through a comparison of the anticipated high school campus and roadways with existing baseline conditions. To help perform the impact analysis, computer-generated simulations were prepared to identify how visible the new high school would be to the surrounding community. Figure 5.1-2, *Residential Viewers*, shows the surrounding residential properties where representative views were assessed. Some of the 10 points represent one property and some multiple properties; however, overall each point identifies areas where residents have views of the surrounding area.

The importance of the view is related in part to the position of the viewer to the resource; therefore, visibility and visual dominance of landscape elements depend on their placement within the viewshed. Areas that can be seen from residential properties are shown in Figure 5.1-3a and Figure 5.1-3b, *Viewsheds*. These figures show the viewsheds from the residential properties that have the most direct line of sight to the proposed project site and include observation points 3 and 4 (one parcel), 6, 7, and 8. Other residents would have some limited views of the site, but these observation points represent the most direct views. Larger images of all viewsheds (from observation points 1 through 10) are included in Appendix C.

5. Environmental Analysis

AESTHETICS

Construction Impacts

Construction activities for the proposed project would introduce a considerable amount of heavy equipment and associated vehicles, including dozers, graders, scrapers, and trucks, into the viewshed of residents. Additionally, the mass grading needed to prepare the project site would involve moving millions of cubic yards of earth. This initial phase of construction would result in the most pronounced visual changes to the proposed project site. Other construction activities would include cut-and-fill operations, with hills and ridges excavated and fill material placed in portions of the drainages and low-lying areas. Initial grading activities would shape the landform, and finish grading would grade the proposed lots and streets to precise finish elevations.

Construction of foundations and buildings, landscaping, and other related activities would follow site preparation and grading. The presence of equipment, vehicles, personnel, and other construction-related elements on the project site would temporarily degrade prominent views from publicly accessible observation points for moderate and high sensitivity viewers. Although short term in duration, this impact is considered significant. Implementation of Mitigation Measures AES-1 and AES-2 could reduce some construction-related aesthetic impacts; however, even with implementation of these measures, impacts would remain significant and unavoidable.

Operational Impacts

Each of the surrounding residents would have a different view of the proposed high school; some would mostly see graded hillsides (points 3 and 4), and some would see more of the campus and less of the graded hillsides (points 6, 7, and 8).

To provide more information about the extent of the graded slopes, ridgelines, and line of sight, additional computer-generated simulations were prepared to illustrate the proposed project conditions as seen from an aerial vantage point (see Figure 5.1-4. *Conceptual Rendering*) The proposed school would not be visible from the west due to the ridgeline along the western site boundary. This figure clearly shows how the high school campus construction would alter the site. Although they are not fully shown in the figure, the project would also grade and pave roads to the site.

Figure 5.1-5a and 5.1-5b *Visual Simulation* is computer generated visual simulations that show what views of the site might look like from several areas to the south and east of the site. Per Mitigation Measures AES-4 and AES-6 the building and walls would not be painted white as shown in the simulation, and buildings would not be solid boxes. The camera for these simulated views were placed at six feet above the ground.

The new high school would change the site by creating a significantly more intense suburban-type land use in a rural area with relatively low-intensity uses. The project area has historically been used for rural residential. As such, artificial intrusions on the landscape have been minimal, and the open quality of the landscape tends to lend value as a scenic resource.

The proposed project site would be transformed from its natural condition to a high school development. Views of the proposed project site would be significantly altered by development, which would introduce buildings, infrastructure, sports fields, and landscaping. Because the project would be constructed below the elevation of the surrounding ridgelines, middle and background views would not be obstructed.

For long-distance views to the proposed project site, visual impacts would be potentially significant if light colors are used on the campus buildings and roofs and if small landscape trees are used. This would cause the project to stand out against the backdrop of muted hillsides. Implementation of applicable minimum



5. Environmental Analysis

AESTHETICS

landscaping standards and building design considerations, as outlined in Mitigation Measures AES-3 through AES-6, would help to reduce this impact to less-than-significant levels for long-distance background viewers. However, there are no feasible mitigation measures to preserve the character or quality of the proposed project site in the vicinity of existing residential properties.

According to the Santa Clarita Valley Area Plan, “The physical setting and history of the Santa Clarita Valley have combined to create several distinctive communities, each with its own special character, development patterns, and lifestyles. Topographically, many neighborhoods are separated from adjacent development by ridgelines or canyons... Outlying areas, such as Val Verde and Hasley Canyon, developed as low-density rural areas based on their residents’ desire for retreat from high-intensity urban centers” (DRP 2010).

Because of the substantial alteration of the existing natural setting, grading of valleys and ridges, reduced topography of the site, the resultant views of graded slopes and school development, and the sensitivity of the residential viewers, impacts to the visual character of the site are considered significant. Implementation of Mitigation Measures AES-3 through AES-6 could reduce some aesthetic impacts; however, even with implementation impacts would remain significant and unavoidable.

Impacts to Significant Ridgelines

“The Santa Clarita Valley’s prominent ridgelines shall be preserved and hillside development shall be limited to protect their valuable aesthetic and visual qualities intrinsic to the Valley landscape” (DRP 2010).

Three ridgelines on the project site are designated Primary Significant Ridgelines by the Castaic Area Community Standards District (see Figure 5.1-1) (DRP 2012c). All three ridgelines extend north-south; one is in the western part of the site; the second passes partway across the site, forming part of the east slope of Romero Canyon; and the third traverses the eastern edge of the site.

The project would not impact the ridgeline in the westernmost part of the site. A landslide removal would extend up the east side of the ridge to about 25 feet below the top of the ridge. The landslide removal is shown as the western end of the graded area on Figure 4-11 and Figure 5.1-4.

The center ridgeline would be graded to create the building pad for the school, Valley Creek Road, and engineered slopes. The elevation decrease from the existing ridgeline to the school building pad would decrease southward for about 900 feet until the school building pad would match the existing elevation. Southward from there, fill soil would be used to raise the pad above the existing grade. Construction of Valley Creek Road (relocation of Romero Canyon Road) would grade the west side and a portion of the top of the eastern ridgeline. Construction of Canyon Hill Road would bisect the ridgeline and reduce the height by about 90 feet.

The visual resources on the site are most importantly hillsides and ridgelines. The County of Los Angeles element discusses the importance of protecting these resources. Impacts to two of the three designated Primary Significant Ridgelines would be significant.

IMPACT 5.1-4: THE PROJECT WOULD CREATE A NEW SOURCE OF SUBSTANTIAL LIGHT THAT WOULD ADVERSELY AFFECT NIGHTTIME VIEWS IN THE AREA [THRESHOLD AES-4]

Impact Analysis: Construction activities at the proposed project site would take place during normal business hours. No new sources of daytime or nighttime light and glare would be created. No nighttime construction or lighting would occur. Therefore, this impact is considered less than significant.

5. Environmental Analysis

AESTHETICS

The proposed project site contains no nighttime light sources at present. However, surrounding land uses include vehicle lights and scattered rural residential development in the hills and valleys surrounding the site. The proposed project would introduce new street lighting, vehicle lights, and campus lights for building security, walkways, parking lots, and athletic fields. The number of playfields that would be lit has not been determined, and it is doubtful that all seven playfields would be lit and in use at the same time. Each field would have four poles a maximum of 75 feet high, per LA County Lighting Ordinance. In cases where two fields abut, one pole could be used to support light fixtures for both fields; however, it is conservatively assumed that 28 poles, 4 for each field, would be used. Maximum light levels on the playfields would be approximately 50 foot-candles (fc) for games (football, baseball, softball, and soccer). Light levels for some other uses would be significantly lower, for instance, 30 fc for football practice or band practice. By comparison, the light level at dusk is 10 fc; twilight is 1 fc; the full moon is 0.01 fc; and typical streetlights are 1 to 5 fc. The introduction of nighttime street, building, field, and parking lot lighting would significantly change the current dark character of the site at night. A detailed lighting study was not conducted for the proposed project because detailed designs are not yet available.

Most lighting sources at the high school would be screened from most surrounding views by intervening landscaping and buildings, but nighttime lighting from new streetlights, the athletic fields, and parking lots would be visible. Automobiles traveling at night would use headlights, but these sources would be focused toward the roadway and screened by existing topography.

Spill light is light that reaches beyond the area of intended illumination into areas where it is not wanted, including residences and natural habitat. The distances of the playfields to the closest project site boundaries are listed below:

- Stadium football/soccer field to south boundary: 810 feet
- Stadium football/soccer field to east boundary: 1,040 feet
- Varsity baseball field to north boundary: 330 feet
- Varsity softball field to southwest boundary: 480 feet

No residential land uses are adjacent to the site boundary; therefore, light spill would not affect homes in the area.

The project site is within the proposed Rural Outdoor Lighting District. The County of Los Angeles is in the process of adopting a Rural Outdoor Lighting District Ordinance. This ordinance would amend Title 22, Planning and Zoning, of the County Code, to establish a Rural Outdoor Lighting District for areas of unincorporated Los Angeles County. The proposed ordinance would establish the district with regulations that would conserve energy and resources and promote dark skies for the enjoyment and health of humans and wildlife while permitting reasonable uses of outdoor lighting for nighttime safety and security. The regulations include limitations on allowable light trespass, shielding outdoor lighting, maximum heights of fixtures, street lighting in rural areas, outdoor recreation facilities, and signs. The Los Angeles County Code Section 22.44.500 et seq., upon approval by the County Board of Supervisors, would place regulations on outdoor lighting (DRP 2012). While the school district is not subject to the Los Angeles County Rural Outdoor Lighting District Ordinance, the District plans to develop a lighting plan that generally follows the intent of the ordinance to minimize lighting impacts.

The zoning on all of the parcels surrounding the project site is A-2-2 and A-2-1, Heavy Agriculture. Thus, the maximum amount of light trespass across the property line is 0.5 foot-candle. Light levels from field lighting



5. Environmental Analysis

AESTHETICS

drop off dramatically within short distances from the fields. The nearest playfield to a site boundary is the varsity baseball field, 330 feet from the north site boundary, so spill light from field lights would comply with proposed regulations of the Rural Outdoor Lighting District Ordinance.

The project would also include parking lot lights and exterior security lights on buildings. Parking lot lights and security lights in landscaped areas other than playfields would be metal halide or high-pressure sodium lights on 15-foot poles. Parking lot lighting would only be provided on paved parking lots and would not be provided in the event parking areas on two evaporation basins in the south part of the site. The nearest parking lot to any site boundary is the event/staff parking lot in the northern part of the site, about 195 feet from the site boundary. Parking lot lights would not project spill light across the site boundary onto other properties. Exterior security lights on buildings would be compact fluorescents. All security lighting in landscaped areas would be at least as far from site boundaries as the parking lot lighting mentioned above, 195 feet. The nearest building to a site boundary that would have exterior security lights would be the performing arts building, 425 feet from the north site boundary. Security lights in landscaped areas and on the exteriors of buildings would not project spill light across site boundaries.

The nearest existing residence to any of the proposed playfields that would be equipped with field lighting is about 1,450 feet southeast of a softball field at the southeast corner of the proposed school building pad. Spill light from field lights would be blocked from reaching the residence by two small ridges between the school site and the residence. No spill light impacts on nearby residences would occur.

Spill light on natural habitat can interfere with nocturnal activities of animals and plants, including foraging, mating, and flowering. Many species of plants and animals rely on day length to time activities such as mating and flowering. Night-flying insects are attracted to artificial lights, leading to easy capture by predatory animals. Some nocturnal species of bats are repelled by light, interfering with feeding by those species (IDA 2011).

At project completion there would be native habitat near the western, eastern, and northern edges of the school site; a graded slope would extend several hundred feet west of the site. The two nearest playfields to natural habitat would be the varsity baseball field at the southwest corner of the school site, 100 feet south of natural habitat west of the site; and the varsity baseball field at the northern end of the school site, 165 feet south of natural habitat north of the school site and opposite Valley Creek Road. At both locations the natural habitat would be about 30 feet higher than the playfield. Since field lights would be mounted 75 feet high, the lights would be about 45 feet above the natural habitat. Spill light levels are expected to be 0.5 fc or less at the closest natural habitat to both of the playfields.

Although all lighting would be fully shielded, reflected light from building, pavement, and field surfaces would still significantly increase the amount of light in the area. CEQA requires the analysis of the project changes on the existing physical environment. Because of the existing dark conditions on the site, the extensive size of this proposed project, and the type of intense lighting (athletic fields and parking lots), there are no feasible mitigation measures to reduce the significant light increase. Even with compliance with the county lighting ordinance, no other feasible measures would reduce the physical light impacts to less-than-significant levels. Mitigation Measures AES-7 to AES-9 would help minimize impacts, but a significant and unavoidable impact would remain.

5.1.4 Cumulative Impacts

Cumulative projects would develop 1,045 single-family dwelling units and a 900-student elementary school. These projects would significantly change the visual character of the area through grading hills, canyons, and native vegetation to form roadways and building pads. Development of the proposed project in

5. Environmental Analysis

AESTHETICS

combination with cumulative projects would change the existing area from rural visual character to a more suburban visual character of tracts of single-family residences and schools.

All of the cumulative projects would have nighttime exterior security lighting and street lights and would significantly increase light in the existing dark terrain. As more projects are constructed around the school, the impact on lighting would diminish because more of the dark conditions would disappear with each new project. The proposed project would construct a 250,000-square-foot high school, parking lots, and access roads. Because there are no lights on or adjacent to the site, the project would significantly impact the nighttime light. In consideration of the preceding factors, the project's contribution to cumulative visual character and nighttime light impacts would be significant, and therefore project aesthetic impacts would be cumulatively considerable.

5.1.5 Existing Regulations and Standard Conditions

- Santa Clarita Valley Area Plan
- Castaic Area Community Standards District
- Rural Outdoor Lighting District

5.1.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.1-1 and 5.1-2.

Without mitigation, the following impacts would be **potentially significant**:

- Impact 5.1-3 The proposed project would substantially alter the existing visual character of the site and its surroundings.
- Impact 5.1-4 The project would create a new source of substantial light that would adversely affect nighttime views in the area.

These impact conclusions apply to both project-specific and cumulative impacts.

Mitigation Measures Considered

In compliance with CEQA, "each public agency shall mitigate or avoid the significant effects on the environment of project it carries out or approves whenever it is feasible to do so" (Public Resources Code, Section 21002.1(b)). The term "feasible" is defined in CEQA to mean "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors" (Public Resources Code, Section 21061.1).

There are no measures for fully mitigating or avoiding the aesthetic impacts. There are no measures that would retain the natural undeveloped landscape or obscure the project from the surrounding residential properties and permit the project to be constructed. Additionally, because the existing site is so dark, almost any amount of light increase would trigger an impact. Therefore even with compliance with the county lighting ordinance, there are no other feasible measures that would reduce the physical light impacts to less-than-significant levels.



5. Environmental Analysis

AESTHETICS

5.1.7 Mitigation Measures

Impact 5.1-3

Construction

- AES-1: During construction, the construction contractor shall locate construction staging areas and store cut-and-fill materials in areas with the least amount of visibility for residents surrounding the site.
- AES-2: During construction, the construction contractor shall hydroseed or otherwise reestablish ground cover on the construction site through seeding and watering within 21 days after active operations have ceased. Plant material shall consist of native plant materials to prevent soil erosion and help preserve the existing landscape character.

Project Design

- AES-3: During project landscape design phase, the School District school facilities project manager or their designee shall draft landscape plans that clearly state:
- Plantings adjacent to buildings and on engineered slopes shall be fully planted to minimize visual intrusion. Residential views of the buildings, slopes, and athletic fields shall be blocked with strategic placement of plants, trees, and other screening such as planted berms. Naturalized trees and shrubs shall be planted to break up the steep graded slopes. Additional plantings shall be used along existing residential site lines.
 - Plantings shall exceed the applicable minimum of the County Fire Department standards for plantings.
 - Removal of vegetation for building construction shall be minimized to the extent possible, consistent with project needs and fire protection needs. Where feasible, an organic pattern of vegetation removal will be used; removal will be conducted selectively to create irregular/naturalistic edges that are feathered rather than hard or straight edged (e.g., squared openings in the clearings).
- AES-4: During architectural planning phase, the School District's school facilities project manager or their designee shall design the buildings to be compatible with and respectful of the natural setting. Building materials, detailing, and colors shall be selected for their ability to enhance the visual character, complement the local surroundings and satisfy the desires of the District and local community.
- AES-5: During grading plan design phase, the School District's school facilities project manager or their designee shall minimize cut-and-fill slopes to the extent feasible to reduce the visibility of such features and promote the blending of earthwork with the surrounding natural environment. Gradual grade transitions (slope rounding) at hinge and catch points on earthwork slopes and flatter slopes shall be shown on grading plans where feasible. Grading plans shall preserve the existing grade around the base of trees that are to remain so their roots are not affected by earthwork. All provisions of this mitigation measure are subject to approval by the Division of the State Architect.

5. Environmental Analysis

AESTHETICS

- AES-6: During the design phase, the School District's school facilities project manager or their designee shall minimize the use of retaining walls to the extent possible. Where retaining walls are required, they shall be constructed with natural-looking wall treatments and colors to reduce the visibility of the wall surface and blend it with the surrounding natural environment. These walls shall have low-sheen and nonreflective surface materials to reduce glare. All finishes shall be matte and roughened; use of smooth, trowelled surfaces and glossy paint shall be avoided. All provisions of this mitigation measure are subject to approval by Division of the State Architect.

Impact 5.1-4

- AES-7: The School District or its designee shall schedule evening events based on their typical duration such that they will end by 10 PM. This will allow the lighting levels for competitive sporting events (50 fc) to be extinguished by 10 pm. Reduced field lighting levels may remain on to allow spectators to exit the campus safely.

- AES-8: Prior to start of project construction, the School District's school facilities project manager or their designee shall develop a lighting plan to limit light spillover to no greater than 0.5 fc at property lines where adjoining light-sensitive land uses. This plan will specify shielding of luminaires, directional control of field and parking lot lights, optimized heights for sports field lights, establishing appropriate field light settings based on the needs of the use (e.g., maximum output (50 fc) for sporting events, lower lighting levels for non-competitive events).

- AES-9: During architecture design, the School District's school facilities project manager or their designee shall incorporate the use of non-reflective glass in all buildings.



5.1.8 Level of Significance After Mitigation

Impact 5.1-3

No feasible mitigation measures are available to reduce aesthetic impacts to less than significant, and impacts would be significant and unavoidable.

Impact 5.1-4

No feasible mitigation measures are available to reduce nighttime light impacts to less than significant, and impacts would be significant and unavoidable.

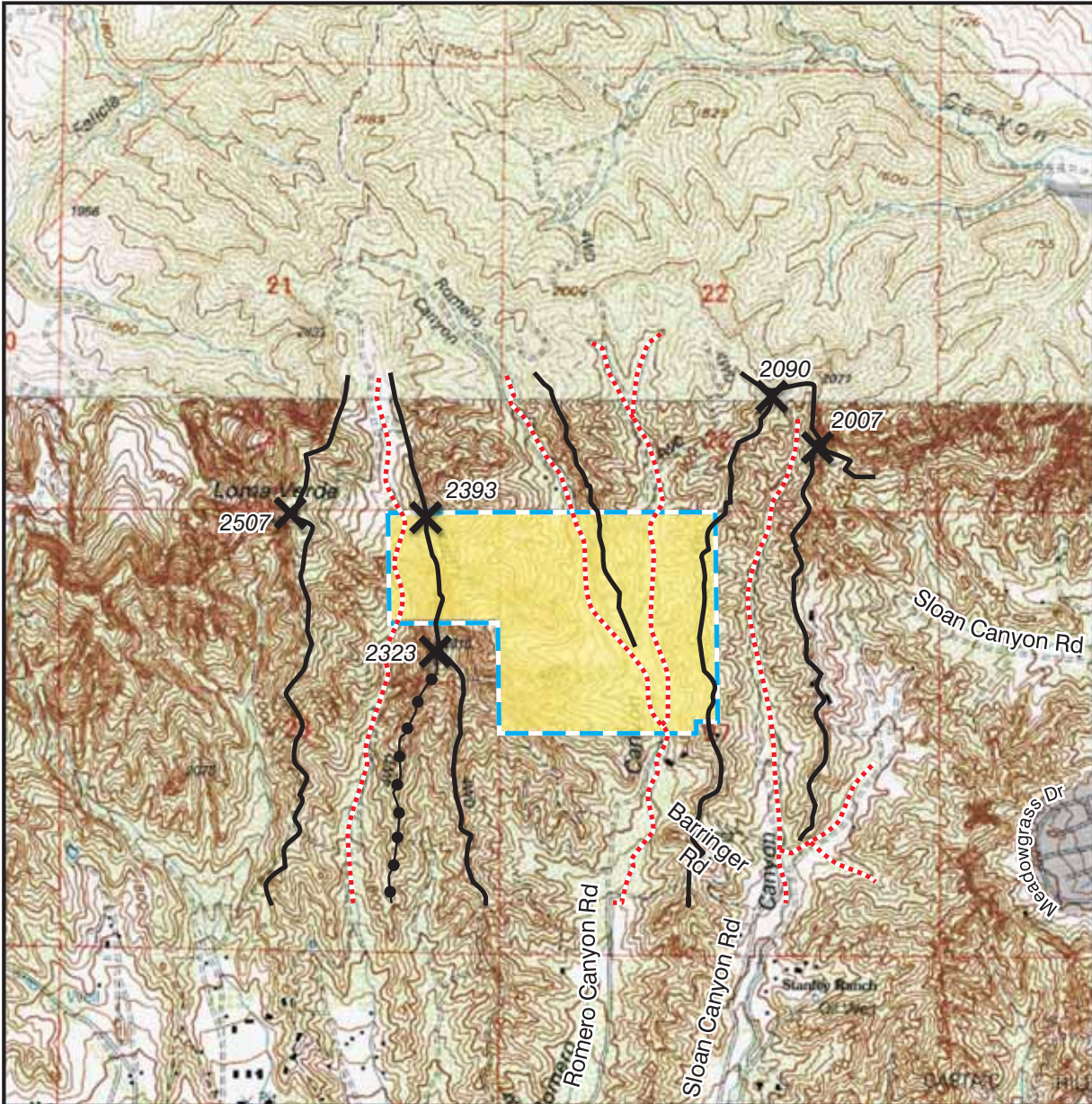
5. *Environmental Analysis*

AESTHETICS

This page intentionally left blank.

5. Environmental Analysis

Significant Ridgelines



- Primary Ridgeline
- Secondary Ridgeline
- Streams
- ✕ Elevation Points
- - - Site Boundary

Note: Not all ridgelines and streams shown; only those in vicinity of project site.

0 2,000
Scale (Feet)



Source: ECORP Consulting Inc 2010

Castaic High School Draft EIR

The Planning Center | DC&E • **Figure 5.1-1**

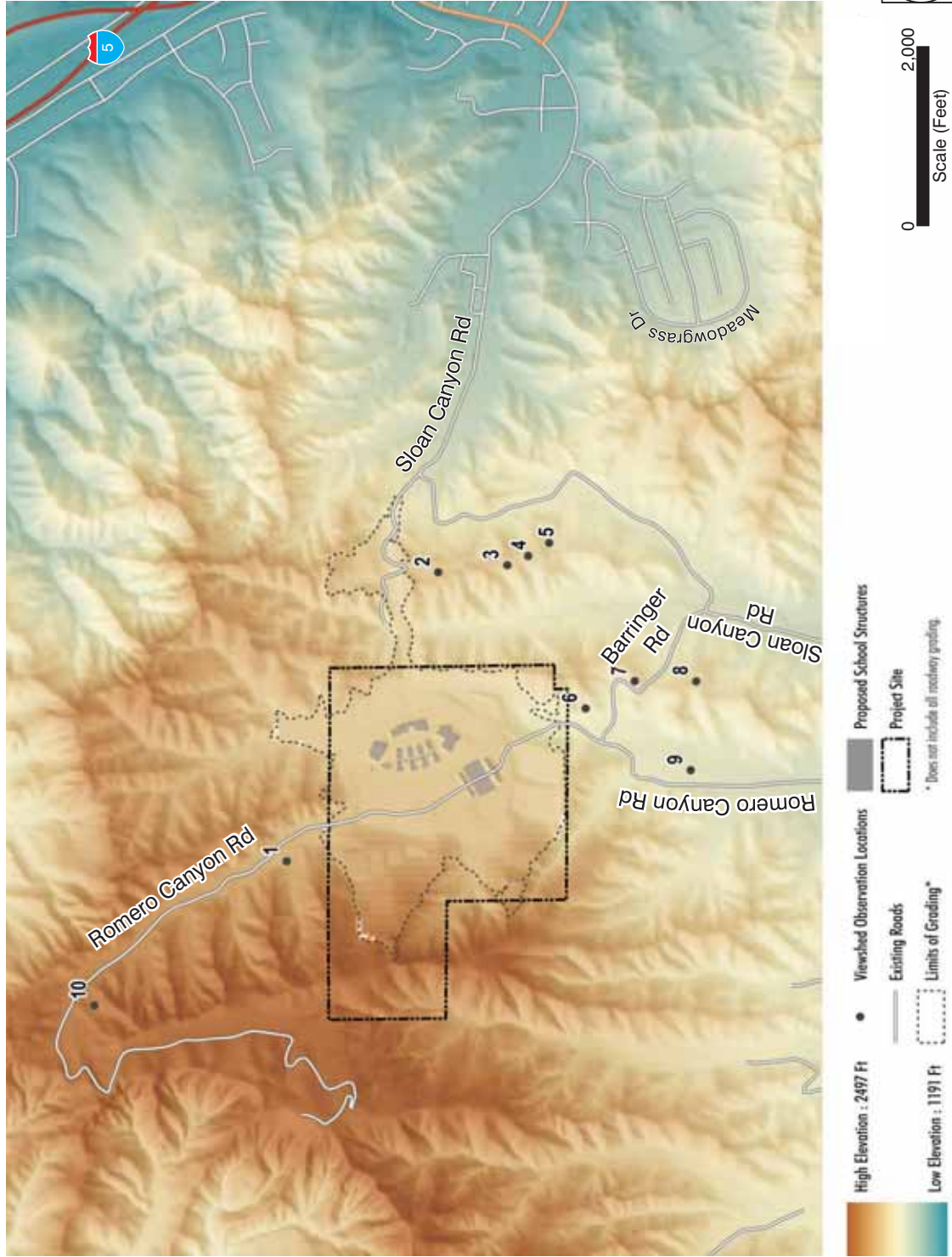
5. *Environmental Analysis*

AESTHETICS

This page intentionally left blank.

5. Environmental Analysis

Residential Viewers



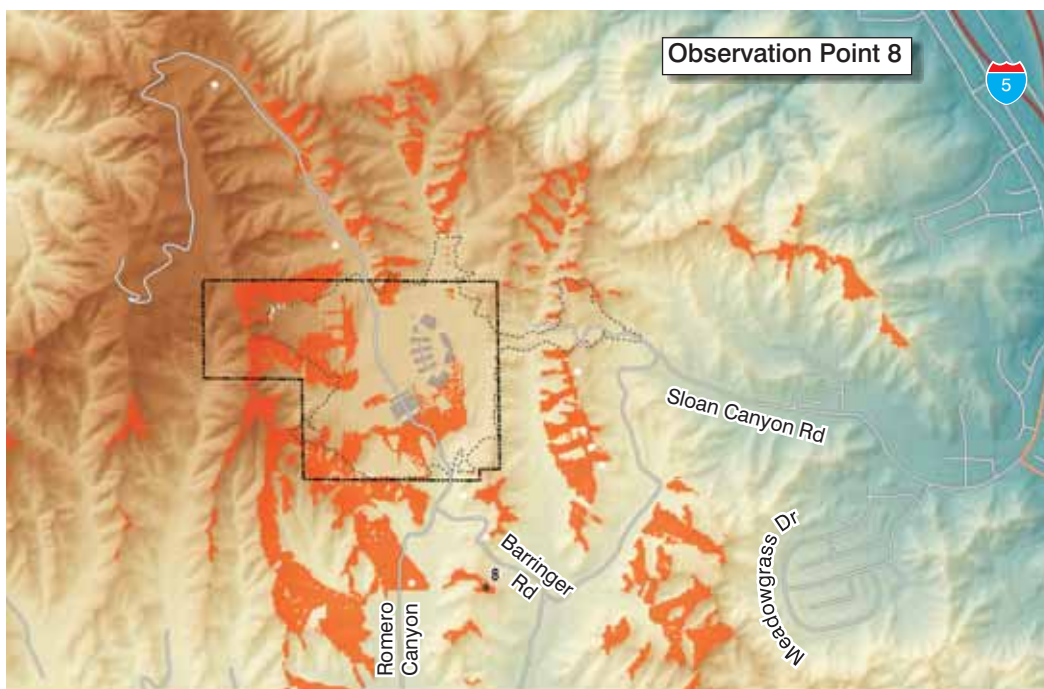
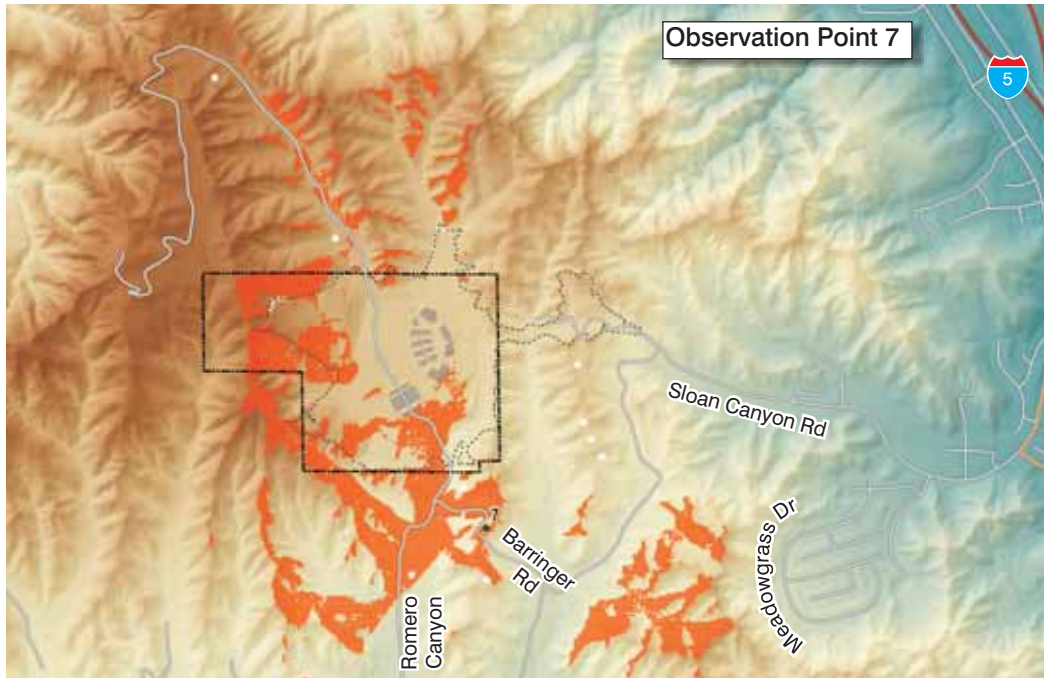
5. *Environmental Analysis*

AESTHETICS

This page intentionally left blank.

5. Environmental Analysis

Viewsbeds



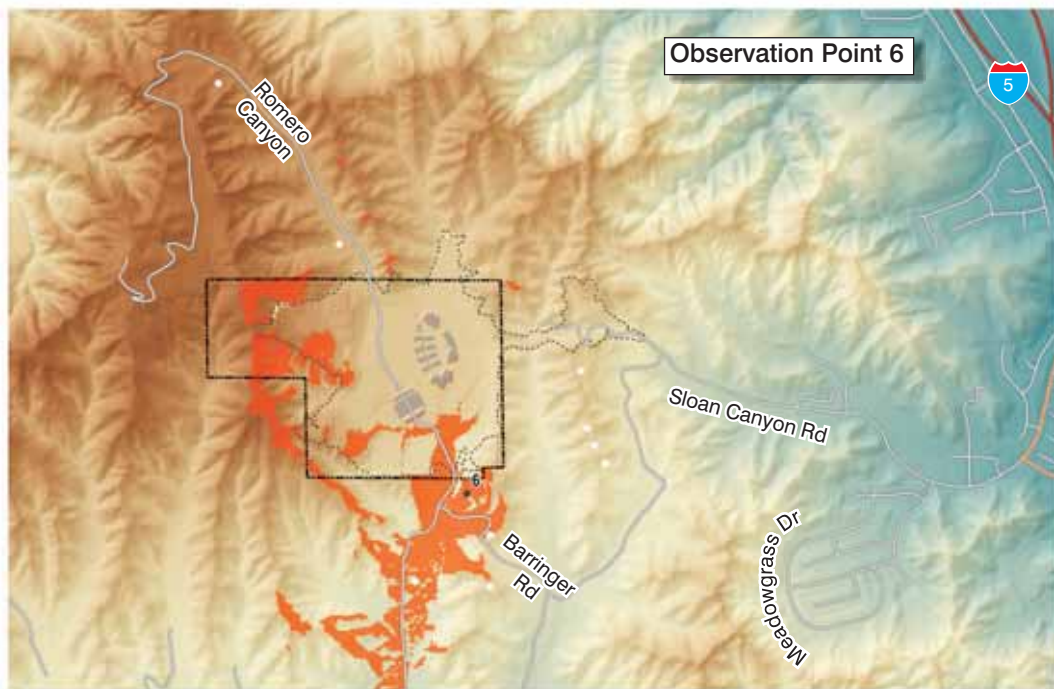
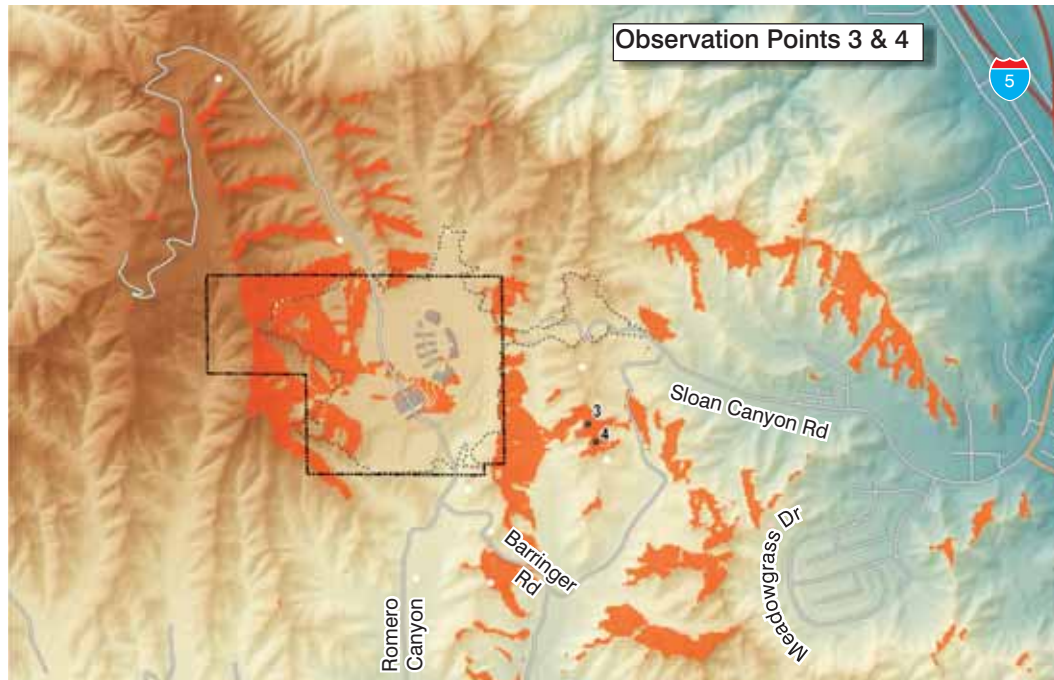
5. *Environmental Analysis*

AESTHETICS

This page intentionally left blank.

5. Environmental Analysis

Viewsbeds



0 2,500
Scale (Feet)



5. *Environmental Analysis*

AESTHETICS

This page intentionally left blank.

5. Environmental Analysis

Conceptual Rendering



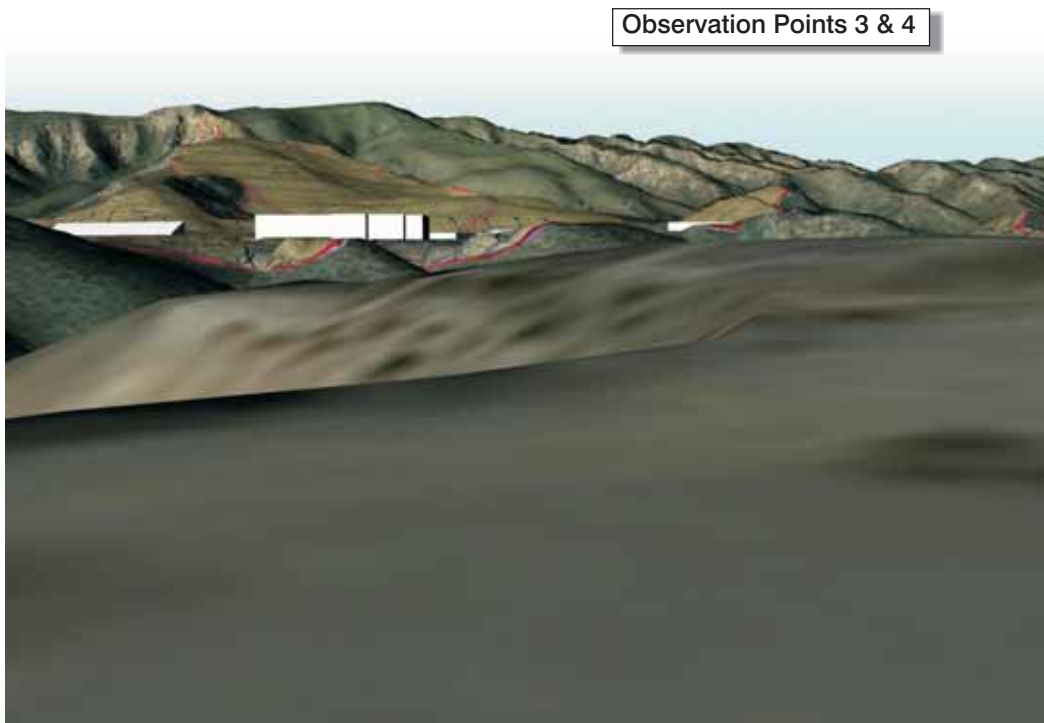
5. *Environmental Analysis*

AESTHETICS

This page intentionally left blank.

5. Environmental Analysis

Visual Simulation



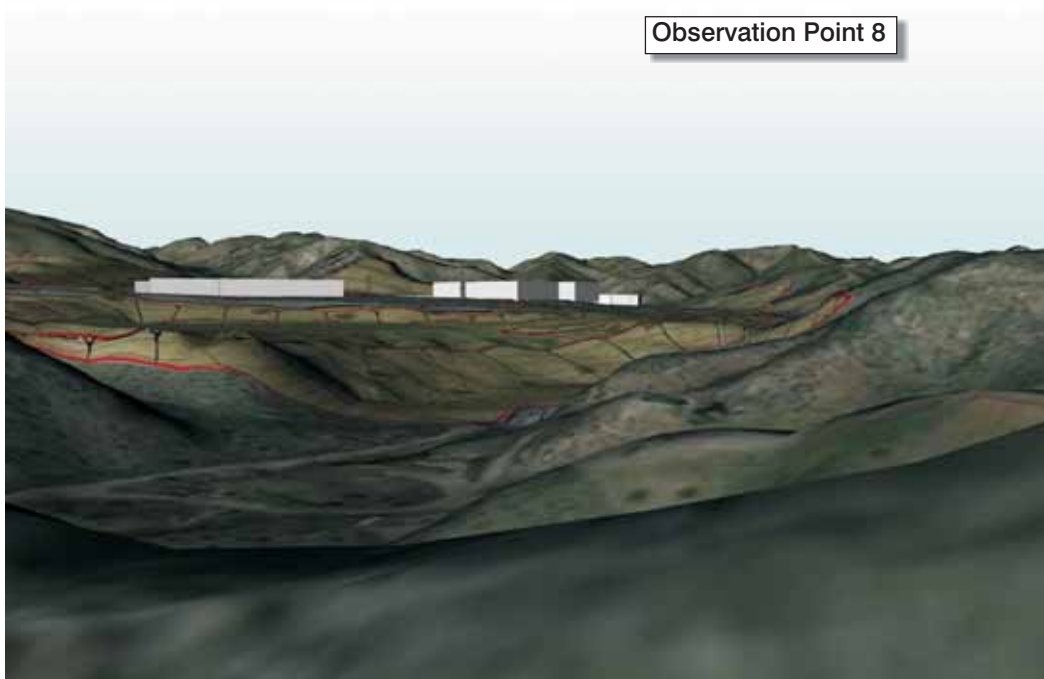
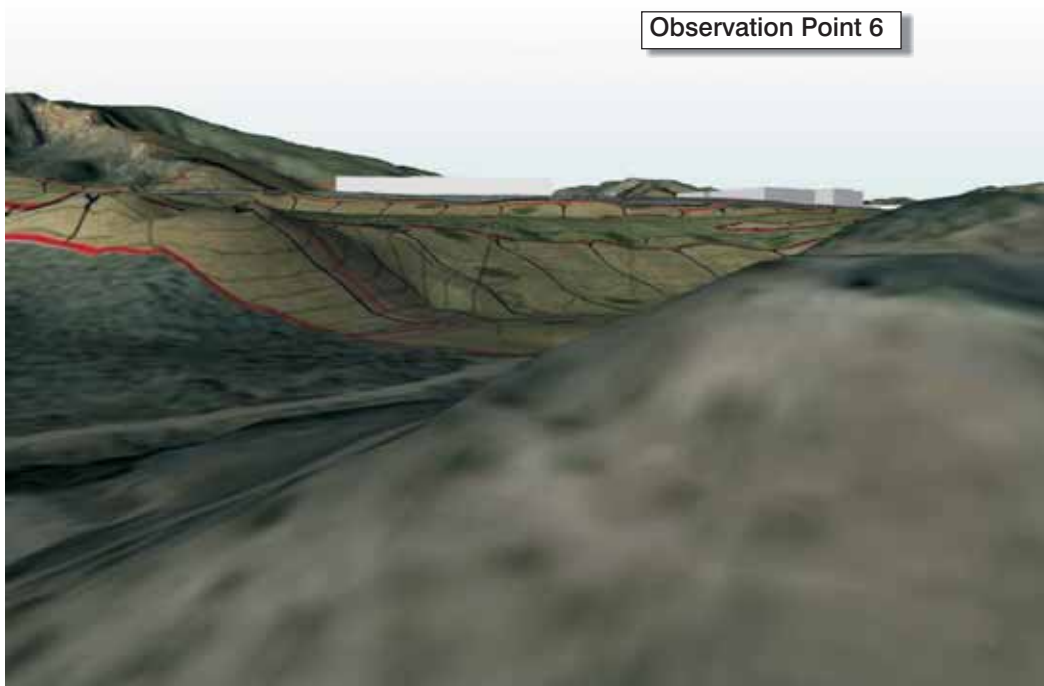
5. *Environmental Analysis*

AESTHETICS

This page intentionally left blank.

5. Environmental Analysis

Visual Simulation



5. *Environmental Analysis*

AESTHETICS

This page intentionally left blank.

5. Environmental Analysis

5.2 AIR QUALITY

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for the Castaic High School project (proposed project) to impact air quality in a local and regional context. The analysis in this section is based on the project trip generation provided by Austin-Foust Associates (Appendix I). The air quality model output sheets are included in Appendix C.

All figures are located at the end of this section.

5.2.1 Environmental Setting

South Coast Air Basin

The project site lies within the South Coast Air Basin (SoCAB), which includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino Counties. The SoCAB is in a coastal plain with connecting broad valleys and low hills; it is bounded by the Pacific Ocean in the southwest quadrant, with high mountains forming the remainder of the perimeter. The general region lies in the semipermanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild weather pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds (SCAQMD 2005).

Temperature and Precipitation

The annual average temperature varies little throughout the SoCAB, from the low to mid 60s Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variance in annual minimum and maximum temperatures than inland areas. The climatological station nearest to the site is the Newhall 5 NW Monitoring Station (ID No. 046161), which reported an average low of 43.8°F in February and average high of 93.6°F in August (WRCC 2012).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all precipitation falls from November through April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast with slightly heavier activity in eastern areas and over the mountains. Rainfall averages 17.80 inches per year in the local area (WRCC 2012).

Humidity

Although the SoCAB has a semiarid climate, the air near the earth's surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the SoCAB by offshore winds, the "ocean effect" is dominant. Periods of heavy fog, especially along the coast, are frequent. Low clouds, often referred to as high fog, are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the eastern portions of the SoCAB (SCAQMD 2005).

Wind

Wind patterns across the south coastal region are characterized by westerly or southwesterly onshore winds during the day and by easterly or northeasterly breezes at night. Wind speed is somewhat greater during the dry summer months than during the rainy winter season.

Between periods of wind, periods of air stagnation may occur, both in the morning and evening hours. Air stagnation is one of the critical determinants of air quality conditions on any given day. During the winter and



5. Environmental Analysis

AIR QUALITY

fall months, surface high-pressure systems over the SoCAB, combined with other meteorological conditions, can result in very strong, downslope Santa Ana winds. These winds normally continue a few days before predominant meteorological conditions are reestablished.

The mountain ranges to the east affect the diffusion of pollutants by inhibiting their eastward transport. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions (SCAQMD 2005).

Inversions

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, there are two similarly distinct types of temperature inversions that control the vertical depth through which pollutants are mixed. These are the marine/subsidence inversion and the radiation inversion. The combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer and the generally good air quality in the winter in the project area (SCAQMD 2005).

Air Pollutants of Concern

Criteria Air Pollutants

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. Air pollutants are categorized as primary or secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), coarse inhalable particulate matter (PM₁₀), fine inhalable particulate matter (PM_{2.5}), and lead (Pb) are primary air pollutants. Of these, CO, SO₂, NO₂, PM₁₀, and PM_{2.5} are “criteria air pollutants,” which means that ambient air quality standards (AAQS) have been established for them. VOC and oxides of nitrogen (NO_x) are air pollutant precursors that form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O₃) and NO₂ are the principal secondary pollutants. A description of each of the primary and secondary criteria air pollutants and their known health effects is presented below.

Carbon Monoxide (CO) is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion, engines and motor vehicles operating at slow speeds are the primary source of CO in the SoCAB. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation (SCAQMD 2005). The SoCAB is designated under the California and National AAQS as being in attainment of CO criteria levels (CARB 2011).

Volatile Organic Compounds (VOC) are compounds composed primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Other sources of VOCs include evaporative emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by VOCs, but rather by reactions of VOCs to forms of secondary pollutants such as ozone (SCAQMD 2005). There are no ambient air quality standards established for VOCs. However, because they contribute to the formation of O₃, the South Coast Air Quality Management District (SCAQMD) has established a significance threshold for this pollutant (SCAQMD 2005).

5. Environmental Analysis

AIR QUALITY

Nitrogen Oxides (NO_x) are a byproduct of fuel combustion and contribute to the formation of O_3 , PM_{10} , and $\text{PM}_{2.5}$. The two major forms of NO_x are nitric oxide (NO) and nitrogen dioxide (NO_2). The principal form of NO_2 produced by combustion is NO, but NO reacts with oxygen to form NO_2 , creating the mixture of NO and NO_2 commonly called NO_x . NO_2 acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 part per million (ppm). NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure (SCAQMD 2005). The SoCAB is designated an attainment area for NO_2 under the National AAQS and nonattainment under the California AAQS (CARB 2011).

Sulfur Dioxide (SO_2) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and from chemical processes at chemical plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2 (SCAQMD 2005). When sulfur dioxide forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_x). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue. The SoCAB is designated in attainment under the California and National AAQS (CARB 2011).

Suspended Particulate Matter (PM_{10} and $\text{PM}_{2.5}$) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM_{10} , include the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or $\text{PM}_{2.5}$, have an aerodynamic diameter of 2.5 microns (i.e., 2.5 millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind action on arid landscapes also contributes substantially to local particulate loading (i.e., fugitive dust). Both PM_{10} and $\text{PM}_{2.5}$ may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems (SCAQMD 2005).



The EPA's scientific review concluded that $\text{PM}_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to health effects and at concentrations that extend well below those allowed by the current PM_{10} standards. These health effects include premature death and increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individuals with cardiopulmonary disease such as asthma); decreased lung function (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms. Diesel particulate matter (DPM) is classified by the California Air Resources Board (CARB) as a carcinogen. The SoCAB is a nonattainment area for $\text{PM}_{2.5}$ and PM_{10} under California and National AAQS (CARB 2011).¹

Ozone (O_3) is commonly referred to as "smog" and is a gas that is formed when VOCs and NO_x , both by-products of internal combustion engine exhaust, undergo photochemical reactions in the presence of sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for the formation of this pollutant. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Additionally, O_3 has been tied to crop damage, typically in the form of stunted

¹ CARB approved the SCAQMD's request to redesignate the SoCAB from serious nonattainment for PM_{10} to attainment under the National AAQS on March 25, 2010, because the SoCAB has not violated federal 24-hour PM_{10} standards during the period from 2004 to 2007. However, the EPA has not yet approved this request.

5. Environmental Analysis

AIR QUALITY

growth and premature death. O₃ can also act as a corrosive, resulting in property damage such as the degradation of rubber products (SCAQMD 2005). The SoCAB is designated in extreme nonattainment under the California AAQS (1-hour and 8-hour) and National AAQS (8-hour) (CARB 2011).

Lead (Pb) concentrations decades ago exceeded the state and federal AAQS by a wide margin, but have not exceeded state or federal air quality standards at any regular monitoring station since 1982 (SCAQMD 2005). However, in 2008 the EPA and CARB adopted more strict lead standards, and special monitoring sites immediately downwind of lead sources² recorded very localized violations of the new state and federal standards. As a result of these localized violations, the Los Angeles County portion of the SoCAB was designated in 2010 as nonattainment under the California and National AAQS for lead (CARB 2011). The project is not characteristic of industrial-type projects that have the potential to emit lead. Therefore, lead is not a pollutant of concern for the project.

Toxic Air Contaminants

The public's exposure to air pollutants classified as toxic air contaminants (TACs) is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant (HAP) pursuant to Section 112(b) of the federal Clean Air Act (42 United States Code § 7412[b]) is a toxic air contaminant. Under state law, the California Environmental Protection Agency (Cal/EPA), acting through CARB, is authorized to classify a substance as a TAC if it determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bill (AB) 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs, all of which are identified as having no safe threshold.

Air toxics from stationary sources are also regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, toxic air contaminant emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

By the last update to the TAC list in December 1999, CARB has designated 244 compounds as TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be

² Source-oriented monitors record concentrations of lead at lead-related industrial facilities in the SoCAB, which include Exide Technologies in the City of Commerce; Quemetco, Inc., in the City of Industry; Trojan Battery Company in Santa Fe Springs; and Exide Technologies in Vernon. Monitoring conducted between 2004 through 2007 identified that the Trojan Battery Company and Exide Technologies exceed the federal standards (SCAQMD 2010).

5. Environmental Analysis

AIR QUALITY

attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

In 1998, CARB identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

In 2000, SCAQMD conducted a study on ambient concentrations of TACs and estimated the potential health risks from air toxics. The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,400 in a million. The largest contributor to this risk was diesel exhaust, accounting for 71 percent of the air toxics risk. In 2008, SCAQMD conducted its third update to this study. The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,200 in one million. The largest contributor to this risk was diesel exhaust, accounting for approximately 84 percent of the air toxics risk (SCAQMD 2008). In the vicinity of the project site, excess cancer risk ranges between 223 and 357 in a million (SCAQMD 2012).

Regulatory Framework

AAQS have been promulgated at the local, state, and federal levels for criteria pollutants. The project site is in the SoCAB and is subject to the rules and regulations imposed by SCAQMD, as well as the California AAQS adopted by CARB and federal AAQS.

Ambient Air Quality Standards

The Federal Clean Air Act (FCAA) was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act Amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting AAQS and the Prevention of Significant Deterioration program. The 1990 Amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The FCAA allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The state AAQS tend to be more restrictive than the National AAQS and are based on even greater health and welfare concerns.

The AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect sensitive receptors, those most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both the State of California and the federal government have established health-based AAQS for seven air pollutants. As shown in Table 5.2-1, these pollutants include O₃, NO₂, CO, sulfur dioxide (SO₂), PM₁₀, PM_{2.5}, and lead (Pb). In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.



5. Environmental Analysis

AIR QUALITY

Table 5.2-1
Ambient Air Quality Standards for Criteria Pollutants

<i>Pollutant</i>	<i>Averaging Time</i>	<i>California Standard</i>	<i>Federal Primary Standard</i>	<i>Major Pollutant Sources</i>
Ozone (O ₃)	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.075 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO ₂)	Annual Average	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	*	0.030 ppm ²	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm ¹	
	24 hours	0.04 ppm	0.014 ppm ²	
Respirable Coarse Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	20 µg/m ³	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m ³	150 µg/m ³	
Respirable Fine Particulate Matter (PM _{2.5})	Annual Arithmetic Mean	12 µg/m ³	15 µg/m ³	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m ³	
Lead (Pb)	Monthly	1.5 µg/m ³	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Quarterly	*	1.5 µg/m ³	
	3-Month Average	*	0.15 µg/m ³	
Sulfates (SO ₄)	24 hours	25 µg/m ³	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo = 0.23/km visibility of 10 ≥ miles ¹	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.

5. Environmental Analysis

AIR QUALITY

Table 5.2-1
Ambient Air Quality Standards for Criteria Pollutants

<i>Pollutant</i>	<i>Averaging Time</i>	<i>California Standard</i>	<i>Federal Primary Standard</i>	<i>Major Pollutant Sources</i>
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H ₂ S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hour	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: CARB 2012.

ppm: parts per million; $\mu\text{g}/\text{m}^3$: micrograms per cubic meter

¹ When relative humidity is less than 70 percent.

² On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. The 1971 SO₂ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

* Standard has not been established for this pollutant/duration by this entity.



Air Quality Management Planning

The SCAQMD and the Southern California Association of Governments (SCAG) are the agencies responsible for preparing the Air Quality Management Plan (AQMP) for the SoCAB. Since 1979, a number of AQMPs have been prepared.

The most recent adopted comprehensive plan is the 2007 AQMP, which was adopted on June 1, 2007, and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2007 AQMP proposes attainment demonstration of the federal PM_{2.5} standards through a more focused control of SO_x, directly emitted PM_{2.5}, NO_x, and VOC by 2015. The eight-hour ozone control strategy builds upon the PM_{2.5} strategy, augmented with additional NO_x and VOC reductions to meet the standard by 2024, assuming a bump-up (i.e., extended attainment date) is obtained.

The AQMP provides local guidance for the State Implementation Plan, which provides the framework for air quality basins to achieve attainment of the state and federal ambient air quality standards. Areas that meet ambient air quality standards are classified attainment areas, while areas that do not meet these standards are classified nonattainment areas. Severity classifications for ozone nonattainment range in magnitude: marginal, moderate, serious, severe, and extreme. The attainment status for the SoCAB is included in Table 5.2-2.

5. Environmental Analysis

AIR QUALITY

The SoCAB is also designated in attainment of the California AAQS for SO₂ and sulfates. According to the 2007 AQMP, the SoCAB will have to meet the new federal PM_{2.5} standards by 2015 and the 8-hour ozone standard by 2024, and will most likely have to achieve the recently revised 24-hour PM_{2.5} standard by 2020. The SCAQMD has recently designated the SoCAB in nonattainment for NO₂ (entire basin) under the California AAQS, lead (Los Angeles County only) under the California and National AAQS, and has requested to designate the SoCAB in attainment/maintenance for PM₁₀ under the National AAQS (CARB 2011). Transportation conformity for nonattainment and maintenance areas is required under the FCAA to ensure federally supported highway and transit projects conform to the State Implementation Plan. The U.S. EPA approved California's SIP revisions for attainment of the 1997 8-hour O₃ National AAQS for the SoCAB in March 2012. Findings for the new 8-hour O₃ emissions budgets for the SoCAB and consistency with the recently adopted 2012 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) were submitted to the EPA for approval.

Table 5.2-2
Attainment Status of Criteria Pollutants in the South Coast Air Basin

<i>Pollutant</i>	<i>State</i>	<i>Federal</i>
Ozone – 1-hour	Extreme Nonattainment	Extreme Nonattainment ¹
Ozone – 8-hour	Extreme Nonattainment	Severe-17 Nonattainment ²
PM ₁₀	Serious Nonattainment	Serious Nonattainment ³
PM _{2.5}	Nonattainment	Nonattainment
CO	Attainment	Attainment ⁴
NO ₂	Nonattainment ⁵	Attainment/Maintenance
SO ₂	Attainment	Attainment
Lead	Nonattainment ⁶	Nonattainment ⁶
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2011.

¹ Under prior standard.

² SCAQMD may petition for Extreme Nonattainment designation.

³ Annual Standard Revoked September 2006. SCAQMD submitted a request to redesignate the SoCAB from serious nonattainment for PM₁₀ to attainment for PM₁₀ in October 2009 because the SoCAB has not violated federal 24-hour PM₁₀ standards during the period from 2004 to 2007.

⁴ The EPA granted the request to redesignate the SoCAB from nonattainment to attainment for the CO National AAQS on May 11, 2007 (Federal Register Volume 71, No. 91), which became effective as of June 11, 2007.

⁵ The state NO₂ standard was strengthened in 2007 from 0.25 ppm to 0.18 ppm. Under the revised standards, the entire SoCAB was designated nonattainment on March 25, 2010. In addition, the EPA adopted a new 1-hour NO₂ standard of 0.100 ppm on January 22, 2010.

⁶ The Los Angeles County portion of the SoCAB was designated nonattainment for lead under the new National AAQS and existing California AAQS as a result of large industrial emitters. Remaining areas within the SoCAB are unclassified. (March 25, 2010).

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project site and project area are best documented by measurements made by SCAQMD. The project site is located within Source Receptor Area (SRA) 15 – San Gabriel Mountains. The air quality monitoring station closest to the project is the Santa Clarita Monitoring Station. This station does not monitor SO_x and PM_{2.5}, therefore data from the Burbank-West Palm Avenue and Piru-3301 Pacific Avenue monitoring stations were obtained for these criteria pollutants. Data from these stations are summarized in Table 5.2-3. The data show that the area regularly exceeds the state and federal one-hour and eight-hour O₃ standards and occasionally exceeds the state and federal PM₁₀ standards. The CO, SO₂, NO₂, and PM_{2.5} standards have not been exceeded in the last five years in the project vicinity.

5. Environmental Analysis

AIR QUALITY

**Table 5.2-3
Ambient Air Quality Monitoring Summary**

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations				
	2007	2008	2009	2010	2011
Ozone (O₃)¹					
State 1-Hour ≥ 0.09 ppm	31	54	57	18	31
State 8-hour ≥ 0.07 ppm	65	81	77	41	52
Federal 8-Hour > 0.075 ppm	44	60	64	23	31
Max. 1-Hour Conc. (ppm)	0.135	0.160	0.140	0.126	0.144
Max. 8-Hour Conc. (ppm)	0.110	0.131	0.122	0.105	0.122
Carbon Monoxide (CO)¹					
State 8-Hour > 9.0 ppm	0	0	0	0	0
Federal 8-Hour ≥ 9.0 ppm	0	0	0	0	0
Max. 8-Hour Conc. (ppm)	1.20	1.14	1.35	1.15	0.79
Nitrogen Dioxide (NO₂)¹					
State 1-Hour ≥ 0.18 ppm	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.084	0.073	0.060	0.059	0.060
Sulfur Dioxide (SO₂)²					
State 1-Hour ≥ 0.04 ppm	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.003	0.003	0.003	0.004	0.002
Coarse Particulates (PM₁₀)¹					
State 24-Hour > 50 µg/m ³	3	2	1	0	0
Federal 24-Hour > 150 µg/m ³	1	0	0	0	0
Max. 24-Hour Conc. (µg/m ³)	167.0	91.0	56.0	40.0	39.0
Fine Particulates (PM_{2.5})³					
Federal 24-Hour > 35 µg/m ³	0	0	0	0	0
Max. 24-Hour Conc. (µg/m ³)	34.3	29.4	20.5	18.4	17.3

Source: CARB 2012.

ppm: parts per million; µg/m³: or micrograms per cubic meter.

¹ Data obtained from the Santa Clarita Monitoring Station at 22224 Placerita Canyon Road in the City of Santa Clarita.

² Data obtained from the Burbank-W Palm Avenue Monitoring Station at 228 West Palm Avenue in the City of Burbank.

³ Data obtained from the Piru-3301 Pacific Avenue Monitoring Station.



Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

Residential areas are also considered to be sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

5. Environmental Analysis

AIR QUALITY

The closest sensitive receptor to the school site is the single-family residence approximately 71 feet from the southern boundary of the proposed school. Other nearby sensitive receptors include the low-density residential land uses farther to the south of the school and several single-family residences are approximately 1,300 feet to the east of the proposed school. However, the closest sensitive receptors to project-related construction activities are the receptors along the proposed roadway alignment. During roadway construction some receptors are approximately 52 feet (16 meters) from project-related construction activities.

5.2.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

- AQ-1 Conflict with or obstruct implementation of the applicable air quality plan.
- AQ-2 Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- AQ-3 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
- AQ-4 Expose sensitive receptors to substantial pollutant concentrations.
- AQ-5 Is the boundary of the proposed school site within 500 feet of the edge of the closest traffic lane of a freeway or busy traffic corridor? If yes, would the project create an air quality health risk due to the placement of the School?
- AQ-6 Create objectionable odors affecting a substantial number of people.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold AQ-5
- Threshold AQ-6

These impacts will not be addressed in the following analysis.

South Coast Air Quality Management District Thresholds

The analysis of the proposed project's air quality impacts follows the guidance and methodologies recommended in SCAQMD's *CEQA Air Quality Handbook* and the significance thresholds on SCAQMD's website.³ CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. SCAQMD has established thresholds of significance for regional air quality emissions for construction activities and project operation. In addition to the daily thresholds listed above, projects are also subject to the AAQS. These are addressed through an analysis of localized CO impacts and localized significance thresholds (LSTs).

³ SCAQMD's Air Quality Significance Thresholds are current as of March 2011 and can be found at: <http://www.aqmd.gov/ceqa/hdbk.html>.

5. Environmental Analysis

AIR QUALITY

Regional Significance Thresholds

SCAQMD has adopted regional construction and operational emissions thresholds to determine a project's cumulative impact on air quality in the SoCAB. Table 5.2-4 lists SCAQMD's regional significance thresholds.

Table 5.2-4 SCAQMD Significance Thresholds		
Air Pollutant	Construction Phase	Operational Phase
Reactive Organic Gases (ROGs)/ Volatile Organic Compounds (VOCs)	75 lbs/day	55 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Nitrogen Oxides (NO _x)	100 lbs/day	55 lbs/day
Sulfur Oxides (SO _x)	150 lbs/day	150 lbs/day
Particulates (PM ₁₀)	150 lbs/day	150 lbs/day

Source: SCAQMD 2011.

CO Hot Spots

Areas of vehicle congestion have the potential to create pockets of CO called hot spots. These pockets have the potential to exceed the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to ambient air quality standards is typically demonstrated through an analysis of localized CO concentrations. Hot spots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds. Typically, for an intersection to exhibit a significant CO concentration, it would operate at level of service (LOS) E or worse without improvements (Caltrans 1997).



Localized Significance Thresholds

SCAQMD developed LSTs for emissions of NO₂, CO, PM₁₀, and PM_{2.5} generated at the project site (offsite mobile-source emissions are not included in the LST analysis). LSTs represent the maximum emissions at a project site that are not expected to cause or contribute to an exceedance of the most stringent federal or state AAQS. LSTs are based on the ambient concentrations of that pollutant within the project SRA and the distance to the nearest sensitive receptor. LST analysis for construction is applicable to all projects of five acres and less; however, it can be used as a screening criterion for larger projects to determine whether or not dispersion modeling may be required. In accordance with SCAQMD's LST methodology, construction LSTs are based on the acreage disturbed per day and on equipment use. Based on the anticipated equipment use, construction activities would disturb approximately 12 acres per day; therefore, the five-acre LSTs are used to screen potential localized significant impacts. The construction and operational LSTs for a five-acre project site within SRA 15 for sensitive receptors within 25 meters (approximately 82 feet) are shown in Table 5.2-5. If emissions exceed the LST for a five-acre site, dispersion modeling needs to be conducted. Projects larger than five acres can determine the localized significance for construction by performing dispersion modeling using the thresholds in Table 5.2-6 for emissions that exceed the LSTs shown in Table 5.2-5. Because the project is not an industrial project that has the potential to emit substantial sources of stationary emissions, operational LSTs are not an air quality impact of concern associated with the project.

5. Environmental Analysis

AIR QUALITY

Table 5.2-5
SCAQMD Localized Significance Thresholds Screening Criteria

<i>Air Pollutant</i>	<i>Threshold (lbs/day)</i>	
	<i>Construction</i>	<i>Operation</i>
Nitrogen Oxides (NO _x)	246	246
Carbon Monoxide (CO)	1,644	1,644
Coarse Particulates (PM ₁₀)	12	3
Fine Particulates (PM _{2.5})	6	2

Source: SCAQMD 2003; SCAQMD 2006, for receptors 82 feet (25 meters) from the source in SRA 15. Construction LSTs are based on 5 acres disturbed per day. Operational LSTs are also based on a 5-acre site.

Table 5.2-6
SCAQMD Localized Significance Thresholds Based on AAQS
for Projects Larger Than 5 Acres

<i>Air Pollutant (Relevant AAQS)</i>	<i>Concentration</i>
1-Hour CO Standard (CAAQS)	20 ppm
8-Hour CO Standard (CAAQS)	9.0 ppm
1-Hour NO ₂ Standard (CAAQS)	0.18 ppm
24-Hour PM ₁₀ Standard – Construction (SCAQMD) ¹	10.4 µg/m ³
24-Hour PM _{2.5} Standard – Construction (SCAQMD) ¹	10.4 µg/m ³
24-Hour PM ₁₀ Standard – Operation (SCAQMD) ¹	2.5 µg/m ³
24-Hour PM _{2.5} Standard – Operation (SCAQMD) ¹	2.5 µg/m ³

ppm – parts per million; µg/m³ – micrograms per cubic meter

¹ Threshold is based on SCAQMD Rule 403. Since the SoCAB is in nonattainment for PM₁₀ and PM_{2.5}, the threshold is established as an allowable change in concentration. Therefore, background concentration is irrelevant.

Health Risk Thresholds

Whenever a project would require use of chemical compounds that have been identified in SCAQMD Rule 1401, placed on CARB's air toxics list pursuant to AB 1807, or placed on the EPA's National Emissions Standards for Hazardous Air Pollutants, a health risk assessment is required by the SCAQMD. SCAQMD's TAC incremental risk thresholds for operation of a project are 10 in a million for the maximum incremental cancer risk and a 1.0 hazard index (project increment). Residential, commercial, and office uses do not use substantial quantities of TACs, and these thresholds are typically applied to new industrial projects. Although not officially adopted by SCAQMD, these thresholds are also commonly used to determine air quality land use compatibility of a project with major sources of TACs within 1,000 feet of a proposed project. The proposed project would not result in the creation of new sources of TACs and is not located near high volume roadways or major stationary sources. It would therefore not result in placement of new sensitive receptors near existing sources of TACs. Therefore, the SCAQMD's TAC incremental risk thresholds are not applicable for the proposed project.

5.2.3 Environmental Impacts

This air quality evaluation was prepared in accordance with the requirements of CEQA to determine if significant air quality impacts are likely to occur in conjunction with the type and scale of development associated with the proposed high school project. SCAQMD has published the *CEQA Air Quality Handbook* (Handbook) and updates on its Web site that are intended to provide local governments with guidance for

5. Environmental Analysis

AIR QUALITY

analyzing and mitigating project-specific air quality impacts. The Handbook provides standards, methodologies, and procedures for conducting air quality analyses in environmental impact reports and was used extensively in the preparation of this analysis. The SCAQMD has published two additional guidance documents—*Localized Significance Threshold Methodology for CEQA Evaluations* (2003) and *Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology* (2006)—that are intended to provide guidance in evaluating localized effects from emissions during construction. These documents were also used in the preparation of this analysis. The analysis also makes use of: the California Emissions Estimator Model (CalEEMod), Version 2011.1.1, for determination of daily construction and operational emissions, and guidance included in the SCAQMD Final Localized Significance Threshold Methodology for localized construction impacts. Transportation sources of criteria air pollutant emissions are based on the traffic impact analysis conducted by Austin-Foust Associates (see Appendix I). Construction-related criteria air pollutant emissions are based on the construction phasing and construction equipment mix provided by the District.

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.2-1: CONSTRUCTION ACTIVITIES WOULD GENERATE SHORT-TERM EMISSIONS THAT EXCEED THRESHOLDS FOR VOC, NO_x, PM₁₀, AND PM_{2.5} AND WOULD CUMULATIVELY CONTRIBUTE TO THE NONATTAINMENT DESIGNATIONS. [THRESHOLDS AQ-2 AND AQ-3]

Impact Analysis: Construction activities produce combustion emissions from various sources. These emissions would primarily be 1) exhaust emissions from powered construction equipment, 2) dust generated by earthmoving, excavation, and other construction activities, 3) motor vehicle emissions associated with vehicle trips, and 4) emissions of VOC from the application of asphalt, paints, and coatings. Grading activities produce fugitive dust emissions (PM₁₀ and PM_{2.5}) from soil-disturbing activities. Exhaust emissions from construction activities onsite would vary daily as construction activity levels change.



Construction activities associated with new development occurring in the project area would temporarily increase localized PM₁₀, PM_{2.5}, VOC, NO_x, SO_x, and CO concentrations in the project vicinity and regional emissions within the SoCAB. The primary source of construction-related CO, SO_x, and NO_x emissions is gasoline- and diesel-powered, heavy-duty mobile construction equipment. Primary sources of PM₁₀ and PM_{2.5} emissions would be clearing activities, excavation and grading operations, construction vehicle traffic on unpaved ground, and wind blowing over exposed earth surfaces. The primary source of VOC emissions would be architectural coating. The following evaluates project-related construction emissions from construction of the proposed high school and the required access roads.

Construction of the proposed high school is estimated to begin November of 2012 and last to July 2015 (approximately 32 months). As summarized in Section 4.6, construction of the proposed project would consist of site preparation, grading, trenching, asphalt paving, building construction, and architectural coating. Construction emissions from these activities are shown in Table 5.2-7

5. Environmental Analysis

AIR QUALITY

**Table 5.2-7
Maximum Daily Construction Emissions**

Source ¹	Pollutants (lb/day)					
	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Site Preparation 2012	9	69	41	<1	47	11
Hauling (During Site Preparation) 2012	<1	4	3	0	108	237
Grading 2012	31	270	132	<1	96	25
Maximum Daily Emissions 2012	40	343	176	<1	259	274
Site Preparation 2013	8	65	39	<1	47	11
Grading 2013	30	254	124	<1	95	24
Trenching 2013	2	16	13	<1	14	2
Asphalt Paving 2013	3	22	14	<1	39	5
Maximum Daily Emissions 2013	40	335	176	<1	156	38
Grading 2014	28	236	117	<1	94	24
Trenching 2014	2	15	13	<1	14	2
Asphalt Paving 2014	3	21	14	<1	39	5
Road and Building Construction 2014	8	56	44	<1	5	4
Maximum Daily Emissions 2014	42	328	187	<1	153	35
Trenching 2015	2	14	13	<1	14	2
Asphalt Paving 2015	3	19	14	<1	39	5
Road and Building Construction 2015	8	51	43	<1	5	3
Architectural Coating 2015	66	3	3	0	<1	<1
Maximum Daily Emissions 2015	79	87	72	<1	58	11
Maximum Daily Emissions	79	343	187	<1	259	274
SCAQMD Regional Emissions Thresholds	75	100	550	100	150	150
Exceeds Threshold	Yes	Yes	No	No	Yes	Yes

Source: CalEEMod Version 2011.1.1.

¹ Construction equipment mix provided by District. Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by SCAQMD of construction equipment and phasing for comparable projects. PM₁₀ and PM_{2.5} fugitive dust emissions assume application of Rule 403, which includes watering exposed surfaces at least two times daily, managing haul road dust by watering two times daily, street sweeping, and restricting speeds onsite to 15 miles per hour.

As shown in the table, air pollutant emissions of VOC, NO_x, PM₁₀, and PM_{2.5} would exceed their respective SCAQMD regional significance thresholds. All other analyzed criteria air pollutants would be less than the SCAQMD's significance thresholds. The primary source of NO_x emissions would be from off-road construction equipment exhaust during onsite grading operations, which would elevate the localized NO_x concentrations in the project vicinity. Additionally, NO_x is a precursor to both the formation of O₃ and particulate matter (PM₁₀ and PM_{2.5}). Emissions of NO_x that exceed the SCAQMD's regional significance threshold would significantly contribute to the O₃ and particulate matter (PM₁₀ and PM_{2.5}) nonattainment designations of the SoCAB. The primary source of VOC would be paints used during architectural coating. The primary sources of PM₁₀ and PM_{2.5} would be fugitive dust generated during hauling operations and off-road construction equipment. Impacts from VOC, NO_x, PM₁₀, and PM_{2.5} emissions generated from construction activities would be potentially significant. Implementation of Mitigation Measures AQ-1 through AQ-4 would reduce these air quality impacts, but not to less than significant levels.

5. Environmental Analysis

AIR QUALITY

IMPACT 5.2-2: LONG-TERM OPERATION WOULD NOT GENERATE EMISSIONS THAT EXCEED THRESHOLDS AND THEREFORE WOULD NOT CUMULATIVELY CONTRIBUTE TO THE NONATTAINMENT DESIGNATIONS. [THRESHOLDS AQ-2 AND AQ-3]

Impact Analysis: The major source of long-term air quality impacts is emissions produced from project-generated vehicle trips. Other sources of long-term air pollutant emissions generated by the project include stationary source emissions generated by the building square footage onsite. Stationary sources would generate less overall emissions of criteria pollutants in than mobile sources.

Typical School Day

The proposed high school would have a capacity of 2,600 students and would generate approximately 7,384 average daily trips (ADT) on a typical school day. The project would construct 250,000 building square feet at full buildout. Long-term air pollutant emissions from mobile and stationary sources were modeled using CalEEMod for the proposed school. Table 5.2-8 shows the operation phase emissions from the proposed school operations. Model runs are included in Appendix B of this DEIR. As shown in the table, operational phase emissions for area-, energy-, and mobile-source emissions are below their respective threshold values, and the impact to the regional air quality would be less than significant.

**Table 5.2-8
Regional Operational Emissions**

<i>Operational Emissions</i>	<i>VOC</i>	<i>NO_x</i>	<i>CO</i>	<i>SO₂</i>	<i>PM₁₀</i>	<i>PM_{2.5}</i>
Summer						
Area Sources	7	0	0	0	0	0
Energy Sources	<1	1	1	0	<1	<1
Mobile Sources	29	28	299	1	66	3
Total Emissions	36	29	299	1	66	3
SCAQMD Regional Thresholds	55	55	550	100	150	150
Exceeds Threshold?	No	No	No	No	No	No
Winter						
Area Sources	7	0	0	0	0	0
Energy Sources	<1	1	1	0	0	0
Mobile Sources	30	32	287	<1	66	3
Total Emissions	36	33	288	<1	66	3
SCAQMD Regional Thresholds	55	55	550	100	150	150
Exceeds Threshold?	No	No	No	No	No	No

Source: CalEEMod, Version 2011.1.1. (pounds per day)

School Day with a Stadium Event

In addition to the mobile- and area-source emissions from daily operations of the proposed high school, the proposed stadium would also generate mobile-source emissions. A full-capacity event at the proposed 5,000-seat stadium would generate an additional 2,860 daily trips. Table 5.2-9 shows operation-related pollutant emissions of the proposed school complex on a school day with a full-capacity stadium event. As shown in the table, a school day with a stadium event would not result in exceedance of the SCAQMD



5. Environmental Analysis

AIR QUALITY

regional thresholds for any of the criteria air pollutants. Impacts to the regional air quality from operation of the proposed school when there is a stadium event would not result in a significant impact.

**Table 5.2-9
Regional Operational Emissions with Stadium Event**

<i>Operational Emissions</i>	<i>VOC</i>	<i>NO_x</i>	<i>CO</i>	<i>SO₂</i>	<i>PM₁₀</i>	<i>PM_{2.5}</i>
Summer						
Area Sources	7	0	0	0	0	0
Energy Sources	<1	1	1	0	<1	<1
Mobile Sources	41	39	415	1	92	4
Total Emissions	47	40	415	1	92	4
SCAQMD Regional Thresholds	55	55	550	100	150	150
Exceeds Threshold?	No	No	No	No	No	No
Winter						
Area Sources	7	0	0	0	0	0
Energy Sources	<1	1	1	0	<1	<1
Mobile Sources	41	45	398	1	92	4
Total Emissions	48	46	399	1	92	4
SCAQMD Regional Thresholds	55	55	550	100	150	150
Exceeds Threshold?	No	No	No	No	No	No

Source: CalEEMod, Version 2011.1.1. (pounds per day)

IMPACT 5.2-3: CONSTRUCTION OF THE PROPOSED PROJECT COULD EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS OF NO_x, PM₁₀, AND PM_{2.5} [THRESHOLD AQ-4]

Impact Analysis: The proposed project could expose sensitive receptors to elevated pollutant concentrations during construction activities if it would cause or contribute significantly to elevating levels. Unlike the mass of construction emissions shown in Tables 5.2-7, which are described in pounds per day, localized concentrations refer to an amount of pollutant in a volume of air (ppm or $\mu\text{g}/\text{m}^3$) and can be correlated to potential health effects. Health risk assessment is based on risk accumulated over a 70-year lifetime. Given the relatively short-term construction schedule for activities (2.5 to 3 years compared to 70 years), the proposed project would not result in a long-term (i.e., 70 years) substantial source of TAC emissions. Based on this, SCAQMD does not require a risk assessment for short-term emissions generated by diesel exhaust from construction equipment. Therefore, project-related diesel particulate matter impacts during construction would not be significant. However, LSTs are the amount of project-related emissions (lbs/day) at which localized concentrations (ppm or $\mu\text{g}/\text{m}^3$) would exceed the ambient air quality standards for criteria air pollutants for which the SoCAB is designated nonattainment. LSTs are based on the size of the project site and distance to the nearest sensitive receptor. Thresholds are based on the California AAQS, which are the most stringent AAQS, designed to protect sensitive receptors most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Table 5.2-10 shows maximum daily construction emissions.

5. Environmental Analysis

AIR QUALITY

**Table 5.2-10
Construction Emissions**

Source ¹	Pollutants			
	NO _x	CO	PM ₁₀	PM _{2.5}
Site Preparation 2012	68	39	12	8
Haul (During Site Preparation) 2012	0	0	<1	0
Grading 2012	268	128	28	19
Maximum Daily Onsite Emissions 2012	336	167	40	26
Site Preparation 2013	64	37	11	8
Grading 2013	252	120	28	18
Trenching 2013	16	12	1	1
Asphalt Paving 2013	19	12	1	1
Maximum Daily Onsite Emissions 2013	332	170	40	26
Grading 2014	234	113	27	17
Trenching 2014	15	12	1	1
Asphalt Paving 2014	18	11	1	1
Road & Building Construction 2014	48	33	3	3
Maximum Daily Onsite Emissions 2014	315	170	32	23
Trenching 2015	14	12	1	1
Asphalt Paving 2015	16	11	1	1
Road & Building Construction 2015	44	33	3	3
Architectural Coatings 2015	3	2	<1	<1
Maximum Daily Onsite Emissions 2015	77	58	5	5
Maximum Daily Onsite Emissions	336	170	40	26
SCAQMD Screening LSTs	246	1,644	12	6
Potentially Significant?	Yes	No	Yes	Yes

Sources: CalEEMod Version 2011.1.1., SCAQMD 2003, and SCAQMD 2006. Based on LSTs for a 5-acre project site in SRA 15 and sensitive receptors within 25 meters (82-feet) between the source and receptor. Excludes emissions from on-road emissions.

¹ Construction equipment mix provided by District. Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by SCAQMD of construction equipment and phasing for comparable projects. PM₁₀ and PM_{2.5} fugitive dust emissions assume application of Rule 403, which includes watering exposed surfaces at least two times daily, managing haul road dust by watering two times daily, street sweeping, and restricting speeds onsite to 15 miles per hour.

As shown in Table 5.2-10, maximum daily construction emissions would exceed the LSTs for NO_x, PM₁₀, and PM_{2.5}. Construction equipment exhaust combined with fugitive particulate matter emissions has the potential to expose sensitive receptors to substantial concentrations of NO_x, PM₁₀, and PM_{2.5}. Implementation of Mitigation Measures AQ-1 through AQ-4 would reduce these air quality impacts, but not to less than significant levels.

IMPACT 5.2-4: PROJECT OPERATION WOULD NOT EXPOSE OFFSITE SENSITIVE RECEPTORS TO SUBSTANTIAL CONCENTRATIONS OF AIR POLLUTANTS. [THRESHOLD AQ-4]

Impact Analysis: The proposed high school project would not be a substantial stationary source of emissions. Land uses that have the potential to be substantial stationary sources that would require a permit from SCAQMD include industrial land uses, such as chemical processing, and warehousing operations where substantial truck idling could occur onsite. Operation of the proposed high school would include occasional use of landscaping equipment and natural gas consumption for heating. However, air pollutant emissions generated from these activities are nominal, and no significant impact would occur.



5. Environmental Analysis

AIR QUALITY

CO Hot Spot Analysis

Areas of vehicle congestion have the potential to create of CO hot spots. These pockets have the potential to exceed the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm. At the time of the 1993 Handbook, the SoCAB was designated nonattainment under the California AAQS and National AAQS for CO. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the SoCAB and in the state have steadily declined. In 2007, the SoCAB was designated in attainment for CO under both the California AAQS and National AAQS. The CO hot spot analysis conducted for the attainment by SCAQMD for the busiest intersections in Los Angeles during the peak morning and afternoon periods plan did not predict a violation of CO standards.⁴ As identified in SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak carbon monoxide concentrations in the SoCAB in years before redesignation were a result of unusual meteorological and topographical conditions and not a result of congestion at a particular intersection. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2011). The proposed project would not produce the volume of traffic required to generate a CO hot spot. Therefore, CO hot spots are not an environmental impact of concern for the proposed project. Localized air quality impacts related to mobile-source emissions would therefore be less than significant.

IMPACT 5.2-5: THE PROPOSED PROJECT WOULD NOT CONFLICT WITH IMPLEMENTATION OF THE APPLICABLE AIR QUALITY MANAGEMENT PLAN. [THRESHOLD AQ-1]

Impact Analysis: CEQA requires that general plans be evaluated for consistency with the AQMP. A consistency determination plays an important role in local agency project review by linking local planning and individual projects to the AQMP. It fulfills the CEQA goal of informing decision makers of the environmental efforts of the project under consideration at a stage early enough to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to clean air goals contained in the AQMP.

The regional emissions inventory for the SoCAB is compiled by SCAQMD and SCAG. Regional population, housing, and employment projections developed by SCAG are based, in part, on general plan land use designations. These projections form the foundation for the emissions inventory of the AQMP. These demographic trends are incorporated into the Regional Transportation Plan, compiled by SCAG to determine priority transportation projects and vehicle miles traveled (VMT) within the SCAG region. Only new or amended general plan elements, specific plans, and major projects need to undergo a consistency review. This is because the AQMP strategy is based on projections from local general plans. Projects that are consistent with the local general plan are considered consistent with the air quality-related regional plan.

As discussed in Section 5.9.3 of this DEIR, the proposed high school is not consistent with the existing zoning and general plan designations assigned for the project site. However, the proposed high school project is not a regionally significant project that would warrant Intergovernmental Review by the Southern California Association of Governments. The project would not result in an increase in population, employment, or housing and therefore would not have the potential to substantially affect housing, employment, and population projections within the southern California region, which is the basis of the AQMP projections. Furthermore, development of the proposed school would fulfill the educational needs of

⁴ The four intersections were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning peak hour and LOS F in the evening peak hour.

5. Environmental Analysis

AIR QUALITY

the existing local residences of the Castaic community and would reduce VMT by minimizing the need for the existing local residents to travel to farther high schools. The proposed high school would minimize VMT even further for the future planned communities that would be located near the proposed school site. Additionally, the proposed high school would minimize the need for students to travel on Interstate 5. Finally, regional emissions generated by operation of the proposed project would be less than the SCAQMD emissions thresholds and would not be considered by SCAQMD to be a substantial source of air pollutant emissions. Therefore the proposed project would not conflict or obstruct implementation of the AQMP, and impacts are less than significant.

5.2.4 Cumulative Impacts

In accordance with SCAQMD's methodology, any project that produces a significant project-level regional air quality impact in an area that is in nonattainment contributes to the cumulative impact. The greatest source of emissions within the SoCAB is mobile sources. Due to the extent of the area potentially impacted from cumulative project emissions (i.e., the SoCAB), SCAQMD considers a project cumulatively significant when project-related emissions exceed the SCAQMD regional emissions thresholds shown in Table 5.2-4. No significant cumulative impacts were identified with regard to CO hot spots.

Construction

The SoCAB is designated nonattainment for O_3 , $PM_{2.5}$, PM_{10} , and lead (Los Angeles County only) under the California and National AAQS and nonattainment for NO_2 under the California AAQS. Construction of cumulative projects will further degrade the regional and local air quality. Air quality will be temporarily impacted during construction activities. Implementation of mitigation measures for related projects would reduce cumulative impacts. Project-related construction emissions would exceed the SCAQMD LSTs for PM_{10} .

Operation

For operational air quality emissions, any project that does not exceed or can be mitigated to less than the daily regional threshold values is not considered by SCAQMD to be a substantial source of air pollution and does not add significantly to a cumulative impact. Operation of the project would not result in emissions in excess of the SCAQMD regional emissions thresholds or conflict with the AQMP.

In consideration of the preceding factors, during construction the project's contribution to cumulative air quality impacts would be significant, and therefore project impacts would be cumulatively considerable. Long-term operational air quality impacts would not be cumulatively considerable.

5.2.5 Existing Regulations and Standard Conditions

- SCAQMD Rule 201: Permit to Construct
- SCAQMD Rule 402: Nuisance Odors
- SCAQMD Rule 403: Fugitive Dust
- SCAQMD Rule 1113: Architectural Coatings
- SCAQMD Rule 1186: Street Sweeping



5. Environmental Analysis

AIR QUALITY

- SCAQMD Rule 1403: Asbestos Emissions from Demolition/Renovation Activities
- CARB Rule 2480 (13 CCR 2480): Airborne Toxics Control Measure to Limit School Bus Idling and Idling at Schools: limits nonessential idling for commercial trucks and school buses within 100 feet of a school.
- CARB Rule 2485(13 CCR 2485): Airborne Toxic Control Measure to Limit Diesel-Fuel Commercial Vehicle Idling: limits nonessential idling to five minutes or less for commercial trucks.
- CARB Rule 2449(13 CCR 2449): In-Use Off-Road Diesel Idling Restricts: limits nonessential idling to five minutes or less for diesel-powered off-road equipment.
- Building Energy Efficiency Standards (Title 24)
- Appliance Energy Efficiency Standards (Title 20)
- Motor Vehicle Standards (AB 1493)

5.2.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements the following impacts would be less than significant: 5.2-2, 5.2-4 and 5.2-5.

Without mitigation, the following impacts would be **potentially significant**:

- Impact 5.2-1 Construction activities associated with the proposed project would generate short-term emissions that exceed SCAQMD'S regional significance thresholds for VOC, NO_x, PM₁₀, and PM_{2.5}.
- Impact 5.2-3 Construction of the proposed project could expose sensitive receptors to substantial pollutant concentrations of NO_x, PM₁₀, and PM_{2.5}.
- Cumulative Project-related construction emissions would exceed the SCAQMD LST for PM₁₀ and therefore, the project's contribution to cumulative air quality impacts would be cumulatively considerable.

5.2.7 Mitigation Measures

Impact 5.2-1

AQ-1 Prior to award of construction contract, School District school facilities project manager or their designee shall include all mitigation measures in the construction bid documents.

- All demolition and grading plans shall clearly show the requirement for United States Environmental Protection Agency Tier 3 or higher emissions standards for construction equipment over 50 horsepower.

AQ-2 During project construction, the construction contractor shall use construction equipment rated by the United States Environmental Protection Agency as having Tier 3 or higher exhaust emission limits for equipment over 50 horsepower will operate for five or more days (40 hours).

5. Environmental Analysis

AIR QUALITY

- A list of construction equipment by type and model year shall be maintained by the construction contractor onsite.
- A copy of each unit's certified Tier specification shall be provided at the time of mobilization of each applicable unit of equipment.
- All construction equipment shall be properly serviced and maintained in accordance with the manufacturer's recommendations.
- All nonessential idling of construction equipment shall be restricted to five minutes or less in compliance with California Air Resources Board's Rule 2449.

AQ-3 Prior to start of grading, the construction contractor shall prepare a dust control plan that includes all mitigation measures and South Coast Air Quality Management District Rule 403. The plan shall include the following measures:

- Nontoxic soil stabilizers/dust suppressants shall be applied to all unpaved roads at the beginning of grading and reapplied a minimum of once per year, during construction activities until roads are paved. Nontoxic soil stabilizers/dust suppressants shall be reapplied more often if necessary to reduce dust.
- Reestablish ground cover on the construction site through seeding and watering within 21 days after active operations have ceased.
- Sweep streets with Rule 1186-compliant, PM₁₀-efficient vacuum units on a daily basis if silt is carried to adjacent paved public thoroughfares or occurs as a result of hauling.
- Maintain a minimum 24-inch freeboard on haul trucks that carry sand, soil, or other loose materials.
- Loose materials shall be securely covered on all haul trucks.
- Water exposed ground surfaces and disturbed areas on the construction site a minimum of every three hours or a minimum of three times per day. Recycled water should be used, if available.
- Stabilize stockpiled materials. Stockpiles within 300 feet of occupied buildings shall not exceed eight feet in height, must have a road bladed to the top to allow water truck access, or must have an operational water irrigation system that is capable of complete stockpile coverage.
- Limit onsite vehicle speeds on unpaved roads to no more than 15 miles per hour.

AQ-4 During application of interior and exterior architectural coatings, the construction contractor shall only use paint with a volatile organic compound (VOC) content of 200 or less (water based or low-VOC paint) to minimize VOC emissions from painting.

Impact 5.2-3

Implementation of Mitigation Measures AQ-1 through AQ-4.



5. Environmental Analysis

AIR QUALITY

5.2.8 Level of Significance After Mitigation

Impact 5.2-1

As shown in Table 5.2-11, implementation of Mitigation Measures AQ-1 through AQ-4 would reduce emissions of VOC, PM₁₀, and PM_{2.5} to below SCAQMD regional thresholds. However, NO_x emissions would continue to exceed its SCAQMD regional threshold during grading activities; therefore, Impact 5.2-1 would remain significant and unavoidable.

Table 5.2-11
Maximum Daily Construction Emissions with Mitigation

Source ¹	Pollutants (lb/day)					
	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Site Preparation 2012	5	32	35	<1	15	6
Hauling (During Site Preparation) 2012	<1	4	3	0	17	38
Grading 2012	20	127	133	<1	34	15
Maximum Daily Emissions 2012	25	164	171	<1	66	59
Site Preparation 2013	5	32	35	<1	15	6
Grading 2013	20	127	133	<1	34	15
Trenching 2013	2	10	13	<1	3	1
Asphalt Paving 2013	2	13	15	<1	7	2
Maximum Daily Emissions 2013	26	169	181	<1	52	22
Grading 2014	20	127	133	<1	34	15
Trenching 2014	2	10	13	<1	3	1
Asphalt Paving 2014	2	12	14	<1	7	2
Road & Building Construction 2014	6	37	46	<1	5	3
Maximum Daily Emissions 2014	30	185	206	<1	48	20
Trenching 2015	2	10	13	<1	3	1
Asphalt Paving 2015	2	12	14	<1	7	2
Road & Building Construction 2015	6	36	45	<1	4	3
Architectural Coating 2015	53	2	3	0	<1	<1
Maximum Daily Emissions 2015	63	59	75	<1	15	6
Maximum Daily Emissions	63	185	206	<1	66	59
SCAQMD Regional Emissions Thresholds	75	100	550	100	150	150
Exceeds Threshold	No	Yes	No	No	No	No

Source: CalEEMod Version 2011.1.1.

¹ Construction equipment mix provided by District. Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by SCAQMD of construction equipment and phasing for comparable projects. Includes Mitigation Measures 2-1 through 2-3. PM₁₀ and PM_{2.5} fugitive dust emissions assume application of Rule 403, which includes watering exposed surfaces at least two times daily, managing haul road dust by watering two times daily, street sweeping, and restricting speeds onsite to 15 miles per hour.

Impact 5.2-3

As shown in Table 5.2-12, incorporation of Mitigation Measures AQ-1 through AQ-4 would reduce NO_x to below the LST screening criteria. However, while project-related construction emissions of PM₁₀ and PM_{2.5} would be reduced, they would still exceed the LST screening criteria.

5. Environmental Analysis

AIR QUALITY

Table 5.2-12
Maximum Daily Onsite Construction Localized Emissions – With Mitigation

Source ¹	Pollutants			
	NO _x	CO	PM ₁₀	PM _{2.5}
Site Preparation 2012	31	32	9	6
Haul (During Site Preparation) 2012	0	0	<1	0
Grading 2012	125	129	22	14
Maximum Daily Onsite Emissions 2012	156	162	31	20
Site Preparation 2013	31	32	9	6
Grading 2013	125	129	22	14
Trenching 2013	10	13	1	1
Asphalt Paving 2013	9	12	1	1
Maximum Daily Onsite Emissions 2013	166	175	32	20
Grading 2014	125	129	22	14
Trenching 2014	10	13	1	1
Asphalt Paving 2014	9	12	1	1
Road & Building Construction 2014	29	35	3	3
Maximum Daily Onsite Emissions 2014	173	189	27	18
Trenching 2015	10	13	1	1
Asphalt Paving 2015	9	12	1	1
Road & Building Construction 2015	29	35	3	3
Architectural Coating 2015	1	2	<1	<1
Maximum Daily Onsite Emissions 2015	49	62	4	4
Maximum Daily Onsite Emissions	173	189	32	20
SCAQMD Screening LSTs	246	1,644	12	6
Potentially Significant?	No	No	Yes	Yes

Sources: CalEEMod Version 2011.1.1., SCAQMD 2003, and SCAQMD 2006. Based on LSTs for a 5-acre project site in SRA 15 and sensitive receptors within 25 meters (82-feet) between the source and receptor. Excludes emissions from on-road emissions.

¹ Construction equipment mix provided by District. Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by SCAQMD of construction equipment and phasing for comparable projects. Includes incorporation of Mitigation Measures 2-1 through 2-3. PM₁₀ and PM_{2.5} fugitive dust emissions assume application of Rule 403, which includes watering exposed surfaces at least two times daily, managing haul road dust by watering two times daily, street sweeping, and restricting speeds onsite to 15 miles per hour.

Dispersion modeling was conducted to further analyze air quality and determine the concentration levels of PM₁₀ and PM_{2.5} at the surrounding sensitive receptors. Dispersion modeling using the EPA's Industrial Source Complex Short-Term (ISCST3) Dispersion Model was prepared and the results are summarized in Table 5.2-13.



5. Environmental Analysis

AIR QUALITY

Table 5.2-13						
Localized Significance Threshold Dispersion Modeling Results – With Mitigation						
Year	<i>PM</i>₁₀ Max. 24 Hour Conc. (µg/m³)^{1,2}	<i>PM</i>_{2.5} Max. 24 Hour Conc. (µg/m³)^{1,2}	<i>PM</i>₁₀ and <i>PM</i>_{2.5} Threshold (µg/m³)	<i>No. of Days of PM</i>₁₀ Threshold Exceeded	<i>No. of Days of PM</i>_{2.5} Threshold Exceeded	<i>Receptor Location above Threshold</i>³
2012	12.70	7.92	10.4	4	0	1 and 2
2013	13.40	8.62	10.4	4	0	1 and 2
2014	10.70	7.28	10.4	1	0	1
2015	1.75	1.75	10.4	0	0	None

Source: ISCST3.

¹ Represents construction-related concentration levels for the main campus and the on- and offsite roadway improvements.

² Include Mitigation Measures 2-1 through 2-3.

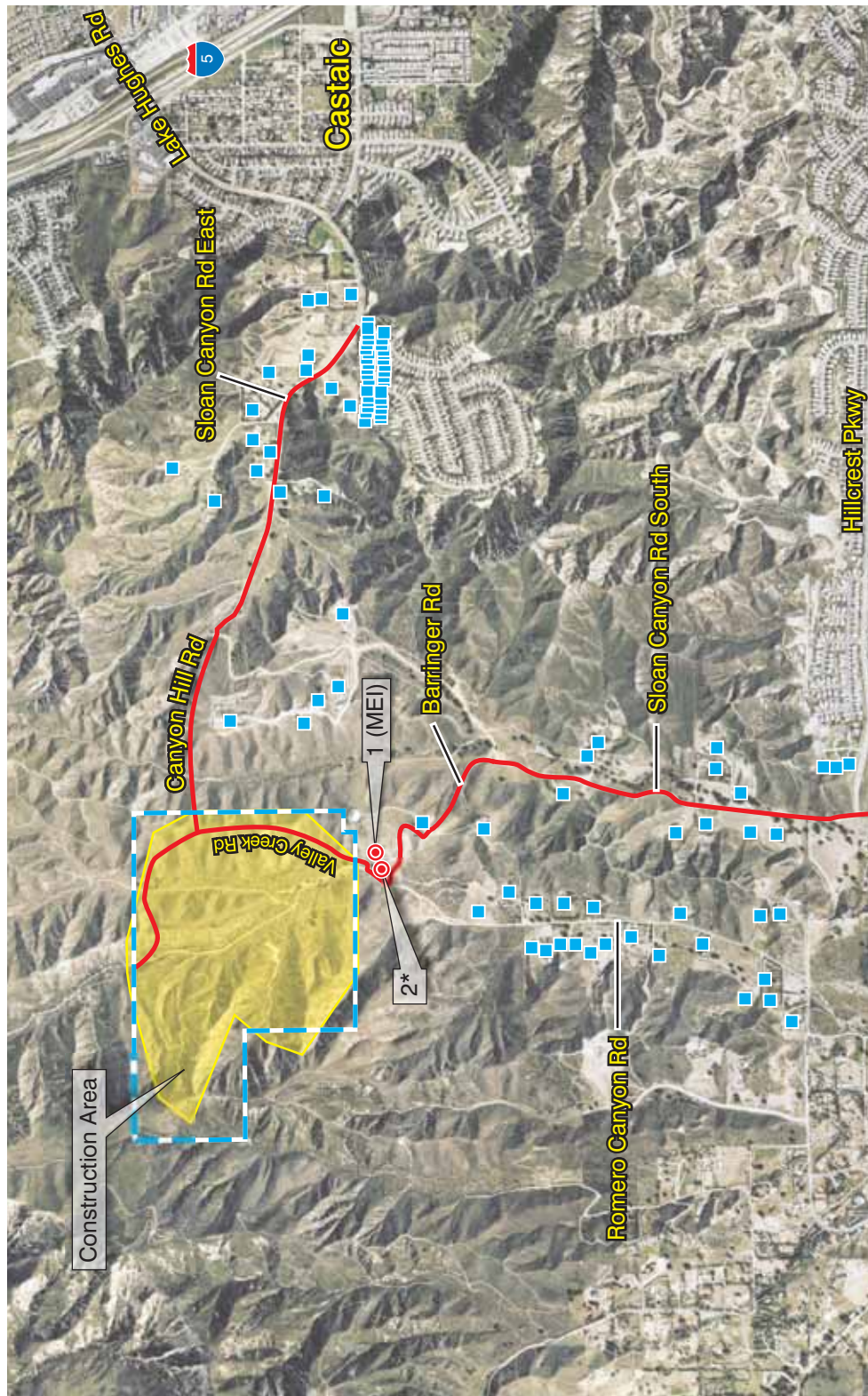
³ See Figure 5.2-1 for locations of offsite sensitive receptors.

As summarized in Table 5.2-13 and shown in Figure 5.2-1, project-related construction emissions generated from construction of the main campus and the on- and offsite roadway improvements would not exceed the AAQS of 10.4 µg/m³ for PM_{2.5} at any of the offsite sensitive receptors. Therefore, localized air quality impacts from construction-related PM_{2.5} would be reduced to less than significant with mitigation. However, construction-related PM₁₀ generated by construction equipment exhaust and fugitive dust would exceed the AAQS of 10.4 µg/m³ at the nearest offsite sensitive receptors for all years except 2015. As shown in the table, for years 2012 and 2013, project-related construction activities would cause the PM₁₀ concentration level to exceed the AAQS at Receptors 1 and 2 for a total of four days each year. In year 2014, the PM₁₀ AAQS would be exceeded at Receptor 1 for a total of one day; PM₁₀ concentrations would be below the AAQS at Receptor 2 for all days of the year. Consequently, even with incorporation of mitigation measures, PM₁₀ generated during construction would continue to exceed the AAQS and generate substantial concentrations of air pollutants at sensitive receptors. Impact 5.2-3 would remain a significant and unavoidable project level impact for localized PM₁₀ concentrations at Receptors 1 and 2.

Cumulative

Project-related construction activities would cause PM₁₀ concentration levels to exceed the AAQS even after incorporation of mitigation. Therefore, the project's contribution to cumulative localized air quality impacts would be cumulatively considerable and remain a significant and unavoidable impact of the project.

Receptors Exposed to Elevated PM₁₀ Concentrations



5. *Environmental Analysis*

AIR QUALITY

This page intentionally left blank.

5. Environmental Analysis

5.3 BIOLOGICAL RESOURCES

The analysis in this section is based in part on the following technical reports:

- *Biological Report for the Castaic High School Project, Los Angeles County, California*, Ecorp Consulting, Inc., July 2012. (includes Jurisdictional Delineation).
- *Mitigation and Monitoring Plan for Castaic High School Project Site, Los Angeles County, California*, Ecorp Consulting, Inc., July 2011.
- *Biological Reconnaissance Report (Revised) and Jurisdictional Delineation Report, for the Romero Canyon Project Located near Val Verde, Los Angeles County, California.*, Ecorp Consulting, Inc., July 2010.
- *TTM 47807 / Oak Tree Permit 89-213 Oak Tree Location Map Update 4-16-2010*, Richard Johnson & Associates, August 31, 2010.
- *Oak Survey of the Romero Canyon Site, Los Angeles County, California*, Independent Environmental Consultants, June 23, 1989.

Complete copies of these studies are included in the Technical Appendices to this Draft EIR Appendix E.

All figures are located at the end of this section.

5.3.1 Environmental Setting

Applicable Plans and Regulations

Federal and State Regulations

Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973, as amended, was promulgated to protect and conserve any species of plant or animal that is endangered or threatened with extinction and the habitats in which these species are found. "Take" of endangered species is prohibited under Section 9 of the FESA. "Take," as defined under the FESA, means to "harass, harm, pursue, hunt, wound, kill, trap, capture, collect, or attempt to engage in any such conduct." Section 7 of the FESA requires federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) on proposed federal actions which may affect any endangered, threatened or proposed (for listing) species or critical habitat that may support the species. Section 4(a) of the FESA requires that critical habitat be designated by the USFWS "to the maximum extent prudent and determinable, at the time a species is determined to be endangered or threatened." Critical habitat is formally designated by USFWS to provide guidance for planners/managers and biologists with an indication of where suitable habitat may occur and where high priority of preservation for a particular species should be given. Section 10 of the FESA provides the regulatory mechanism that allows the incidental take of a listed species by private interests and non-federal government agencies during lawful activities. Habitat conservation plans (HCPs) for the impacted species must be developed in support of incidental take permits for nonfederal projects to minimize impacts to the species and develop viable mitigation measures to offset the unavoidable impacts.



5. Environmental Analysis

BIOLOGICAL RESOURCES

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (MBTA), is the domestic law that affirms, or implements, the United States' commitment to four international conventions with Canada, Japan, Mexico, and Russia for the protection of shared migratory bird resources. The MBTA governs the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. It prohibits the take, possession, import, export, transport, sale, purchase, barter, or offering of these activities, except under a valid permit or as permitted in the implementing regulations. USFWS administers permits to take migratory birds in accordance with the regulations promulgated by the MBTA.

Clean Water Act, Section 404

The United States Army Corps of Engineers (USACE) regulates discharges of dredged or fill material into "waters of the U.S."¹ (Including wetlands and non-wetland bodies of water that meet specific criteria) pursuant to Section 404 of the federal Clean Water Act (CWA), a permit is required for any filling or dredging within waters of the U.S. The permit review process entails an assessment of potential adverse impacts to USACE wetlands and jurisdictional waters, wherein the USACE may require mitigation measures. Where a federally listed species may be affected, a Section 7 consultation with USFWS may be required. If there is potential for cultural resources to be present, Section 106 review may be required. Also, where a Section 404 permit is required, a Section 401 Water Quality Certification would also be required from the Regional Water Quality Control Board (RWQCB).

Clean Water Act, Section 401 and 402

Section 401(a)(1) of the CWA specifies that any applicant for a federal license or permit to conduct any activity that may result in any discharge into navigable waters shall provide the federal permitting agency a certification, issued by the state in which the discharge originates, that any such discharge will comply with the applicable provisions of the CWA. In California, the applicable RWQCB must certify that the project will comply with water quality standards. Permits requiring Section 401 certification include USACE Section 404 permits and National Pollutant Discharge Elimination System (NPDES) permits issued by the Environmental Protection Agency (EPA) under Section 402 of the CWA. NPDES permits are issued by the applicable RWQCB. The area of Castaic is within the jurisdiction of the Los Angeles RWQCB (Region 4).

California Fish and Game Code, Section 1600

Section 1600 of the California Fish and Game Code requires that a project proponent notify the California Department of Fish and Game (CDFG) of any proposed alteration of streambeds, rivers, and lakes. CDFG jurisdiction covers streambeds, lakebeds, and riparian habitat next to streambeds. The intent is to protect habitats that are important to fish and wildlife. CDFG may review a project and place conditions on the project as part of a Streambed Alteration Agreement (SAA). The conditions are intended to address potentially significant adverse impacts within CDFG's jurisdictional limits.

¹ "Waters of the United States," as it applies to the jurisdictional limits of the authority of the Corps of Engineers under the Clean Water Act, includes: all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; all interstate waters including interstate wetlands; all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce; water impoundments; tributaries of waters; territorial seas; wetlands adjacent to waters. The terminology used by Section 404 of the Clean Water Act includes "navigable waters" which is defined at Section 502(7) of the Act as "waters of the United States including the territorial seas." Wetlands are defined as land that is flooded or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that normally does support, a prevalence of vegetation adapted to life in saturated soils. Wetlands include areas such as swamps, marshes, and bogs.

5. Environmental Analysis

BIOLOGICAL RESOURCES

California Endangered Species Act

The California Endangered Species Act (CESA) generally parallels the main provisions of the FESA and is administered by the CDFG. Its intent is to prohibit take and protect state-listed endangered and threatened species of fish, wildlife, and plants. Unlike its federal counterpart, CESA also applies the take prohibitions to species petitioned for listing (state candidates). Candidate species may be afforded temporary protection as though they were already listed as threatened or endangered at the discretion of the Fish and Game Commission. Unlike the FESA, CESA does not include listing provisions for invertebrate species. Under certain conditions, CESA has provisions for take through a 2081 permit or memorandum of understanding (MOU). In addition, some sensitive mammals and birds are protected by the state as fully protected species. California Species of Special Concern are species designated as vulnerable to extinction due to declining population levels, limited ranges, and/or continuing threats. This list is primarily a working document for the CDFG's California Natural Diversity Data Base (CNDDB) project which maintains a database of known and recorded occurrences of sensitive species. Informally listed taxa are not protected per se, but warrant consideration in the preparation of biological resources assessments.

Local Regulations

Under the Los Angeles County Oak Tree Ordinance a person shall not cut, destroy, remove, relocate, inflict damage, or encroach into the protected zone of any tree of the oak tree genus (*Qeurchus*) that is eight inches or more in diameter at breast height (dbh) without first obtaining a permit. While the School District is not subject to the county ordinance, it is used in establishing the significance threshold for impacting oak trees and in determining appropriate mitigation for the loss of oak trees.

Existing Conservation Plans and Areas

Significant Ecological Areas

Significant Ecological Areas (SEAs) are ecologically important land and water areas, designated by Los Angeles County, that are valuable as plant and/or animal communities. SEAs are not preserves; however, development projects proposed in SEAs are subject to increased environmental and design review with the aim of balancing development with ecological resources. The project site is not within an SEA. The Piru Creek SEA is west of the project site.

Santa Clarita Valley Area Plan

The Santa Clarita Valley Area Plan (SCVAP), in conjunction with the other chapters and elements of the County of Los Angeles General Plan, is a coordinated statement of public policy by the County of Los Angeles for making critical public decision relating to the future of the Santa Clarita Valley. The SCVAP addresses the unincorporated communities in Los Angeles County in the Santa Clarita Valley, including Val Verde, where the proposed school is located, and the adjacent Castaic community. The SCVAP includes an environmental resources management element that includes discussion of issues such as natural resources and managed resource protection and incorporates the county's SEAs into the plan.

Biological Surveys of the Site

Biological reconnaissance field surveys of the site were conducted on January 29, 2007 and June 25, 2010. A focused rare plant survey of the site was also conducted on June 25, 2010.



5. Environmental Analysis

BIOLOGICAL RESOURCES

Plant Communities/Habitat

Project Site

The project site comprises a variety of plant communities and vegetation types. The five plant communities that characterize the site are described in Table 5.3-1 below and mapped on Figure 5.3-1, *Vegetation Communities, Project Site*.

**Table 5.3-1
Plant Communities Onsite**

Name	Description	Other Species In Community	State	Acres Onsite
Chamise-Black Sage Chaparral	Mixed community of woody chaparral species and drought deciduous sage scrub species. Often occurs as a post-fire succession community.	Chamise (<i>Adenostoma fasciculatum</i>), black sage (<i>Salvia mellifera</i>), California sagebrush (<i>Artemisia californica</i>), hoaryleaf ceanothus (<i>Ceanothus crassifolius</i>), wedgeleaf ceanothus (<i>C. cuneatus</i>), deer brush (<i>C. integriramus</i>), California buckwheat (<i>Eriogonum fasciculatum</i>), chaparral yucca (<i>Hesperoyucca whipplei</i>), deer weed (<i>Lotus scoparius</i>), laurel sumac (<i>Malosma laurina</i>), sugar bush (<i>Rhus ovate</i>)	Some portions are in a disturbed state due to human disturbances and invasion by nonnative grasses.	76.53
Disturbed Chamise-Black Sage Chaparral		Includes nonnative grasses in addition to some species listed above		59.55
California Sagebrush-California Buckwheat Scrub	Woody species co-dominated by California sagebrush and California buckwheat. Seasonally present herbaceous layer. ¹ Community is present both in lowland areas along roadsides and along slopes.	Thickleaf yerba santa (<i>Eriodictyon crassifolium</i>), chaparral yucca, white sage (<i>Salvia apiana</i>), black sage, holly leaf cherry (<i>Prunus ilicifolia</i>), skunk brush (<i>Rhus trilobata</i>)		14.30
Disturbed Coast Live Oak Woodland	Relatively open understory and sparse to grassy herbaceous layer. Associated with canyon bottom drainages.	Bigleaf maple (<i>Acer macrophyllum</i>), California black walnut (<i>Juglans californica</i>), California sycamore (<i>Platanus racemosa</i>), Fremont cottonwood (<i>Populus fremontii</i>), blue oak (<i>Quercus douglasii</i>), valley oak (<i>Q. lobata</i>), Englemann oak (<i>Q. engelmannii</i>), black oak (<i>Q. kelloggii</i>), arroyo willow (<i>Salix lasiolepis</i>), California laurel (<i>Umbellularia californica</i>)	Highly disturbed and lacking the species diversity normally found in the community	1.89
Wild Oats Grassland	Dominated by wild oats in the herbaceous layer and may have emergent trees and shrubs at low cover. Associated with rangelands, openings in woodlands, and disturbed areas.	Yellow star thistle (<i>Centaurea solstitialis</i>), ripgut brome (<i>Bromus diandrus</i>), foxtail brome (<i>Bromus madritensis</i>)		34.05
Disturbed and Developed Areas	Present throughout the property. Little to no vegetation is present in these areas. Plants observed in disturbed portions of the site were mostly non-native species.			11.55

¹ Herbaceous plants are flowering plants without woody stems.

5. Environmental Analysis

BIOLOGICAL RESOURCES

Roadway Alignments

Vegetation types in the roadway alignments are described below.

Black Sage (Salvia mellifera) Scrub Shrubland Alliance

Black sage scrub is generally found on dry slopes and alluvial fans where soils are shallow. These shrubs grow to about 2 meters (6.6 feet) in height and are drought tolerant. Concurrent shrub species include chamise (*Adenostoma fasciculatum*), California buckwheat (*Eriogonum fasciculatum*), and deerweed (*Acmispon glaber*).

California Annual Grassland

Project areas dominated by herbaceous species² have been mapped as California Annual Grassland. Vegetation series included in this classification and present in roadway alignments are: oat (*Avena [barbata, fatua]*) semi-natural herbaceous stands, mustard (*Brassica [nigra]*) and other mustards seminatural stands, brome (*Bromus [diandrus, hordeaceus]*)-purple false brome (*Brachypodium distachyon*) seminatural stands, star thistle (*Centaurea [solstitialis, melitensis]*) semi-natural stands, clustered tarweed (*Deinandra fasciculata*) herbaceous alliance, foothill needle grass (*Stipa lepida*) provisional alliance. All of these vegetation communities are predominantly composed of non-native ruderal³ species, and are generally found adjacent to the access roads and other recent disturbances. Native species are generally present in low amounts and include clustered tarweed (*Deinandra fasciculata*), foothill needle grass, (*Stipa lepida*), common sandaster (*Corethrogyne filaginifolia*), and deerweed.

California Buckwheat (Eriogonum fasciculatum) Scrub Shrubland Alliance

California buckwheat is a semi-woody shrub that can grow to two meters (6.6 feet) in height and is found in low to mid elevations throughout central and southern California. This species grows in a variety of landscapes, and is generally found in coarse, well-drained soils. This alliance is often one of the first to form following disturbance such as fire, floods, grazing, or mechanical disturbance. California buckwheat is scattered throughout the roadway alignments and is found among deerweed, California sagebrush, and chamise.

California Sagebrush (Artemisia californica) Scrub Shrubland Alliance

California sagebrush is a much-branched shrub that can grow up to two meters (6.6 feet) tall and occurs in the coast ranges of southern and central California. This vegetation can occur on slopes as well as on low-gradients along streams. In the roadway alignments, California sagebrush is patchily scattered, often intermixed with chamise chaparral.

California Sagebrush-California Buckwheat Scrub (Artemisia californica-Eriogonum fasciculatum) Shrubland Alliance

California sagebrush is a much-branched shrub that can grow up to two meters (6.6 feet) tall and occurs in the coast ranges of southern and central California. California buckwheat is a semi-woody shrub that can grow to 2 meters in height and is found in low to mid elevations throughout central and southern California. The mixed California sagebrush-California buckwheat scrub alliance generally occurs on steep south-facing slopes over colluvial derived soils.

² Herbaceous plants are flowering plants without woody stems.

³ Ruderal species are first to colonize disturbed lands.



5. Environmental Analysis

BIOLOGICAL RESOURCES

Chamise (Adenostoma fasciculatum) Chaparral Shrubland Alliance

Chamise is a long-lived, shade-intolerant shrub that can grow to over three meters (10 feet) tall and is found in low to mid elevations throughout California. Chamise chaparral can be found in a variety of landscapes. In the roadway alignments, chamise chaparral is present in varied densities. Low density areas have only scattered amounts of chamise, with the interspaces generally dominated by slender oat (*Avena barbata*) and other herbaceous species. Other areas trend toward closed canopy chaparral and have a low presence of herbaceous species. Other shrubs present in the chamise chaparral include: California sagebrush, hoaryleaf ceanothus (*Ceanothus crassifolius*), white sage (*Salvia apiana*), black sage (*Salvia mellifera*), blue elderberry (*Sambucus nigra* ssp. *cerulea*). Chamise chaparral is one of the dominant vegetation types in the project area.

Chamise-Black Sage (Adenostoma fasciculatum-Salvia mellifera) Chaparral Shrubland Alliance

Chamise-black sage chaparral is similar to chamise chaparral, but this alliance has black sage as a co-dominant shrub species. Black sage is an open, shallow-rooted shrub that can grow to two meters tall, and is most often found on south-facing slopes. This alliance is found along the coast ranges of central and southern California and represents a mix of coastal sage and chaparral species. Many stands have evidence of recent fire or other disturbance. Within the roadway alignments, this alliance is present with low amounts of other shrub species such as California sagebrush and Chaparral yucca (*Hesperoyucca whipplei*).

Coast Live Oak (Quercus agrifolia) Woodland Alliance

The coast live oak is a drought-resistant evergreen tree that can grow to 25 meters in height and is found throughout coastal California. Coast live oak woodland can grow in a variety of situations, including alluvial terraces, canyon bottoms, stream banks, slopes, and flats. In the roadway alignments, the coast live oak woodlands are found along drainages and around otherwise disturbed and developed residential sites.

Deerweed (Acmispon glaber) Scrub Shrubland Alliance

Deerweed is a small, short-lived shrub that grows in areas that have experienced recent disturbances from clearing, fire, or flooding, for example. Deerweed is found in low to mid elevations throughout California. This species commonly dominates recently burned or disturbed areas that supported chaparral and coastal scrub prior to disturbance events. In the roadway alignments, deerweed plants are of relatively low density and are predominantly surrounded by non-native ruderal species, such as wild mustard (*Hirschfeldia incana*), slender oat, and star thistle.

Hoary Leaf Ceanothus (Ceanothus crassifolius) Chaparral Shrubland Alliance

Hoary leaf ceanothus is an evergreen shrub that can grow to over three meters (10 feet) in height. Ceanothus species are obligate seeders, and require fire or other disturbance to persist on the landscape. Hoary leaf ceanothus chaparral is only found in southwestern California.

Holly Leaf Cherry (Prunus ilicifolia) Chaparral Shrubland Alliance

Holly leaf cherry is an evergreen shrub that can grow to 15 meters (50 feet) in height. This species is generally found in the coastal valleys of central and southern California. The holly leaf cherry chaparral alliance often grows in moderately moist sites, and in the project area is generally found on the flat terraces along drainages. Other shrub species that codominate include chamise, blue elderberry, and buckthorn.

5. Environmental Analysis

BIOLOGICAL RESOURCES

Purple Sage (Salvia leucophylla) Scrub Shrubland Alliance

Purple sage is a shallow-rooted shrub that can grow to 1.5 meters (five feet) in height and can be found in coastal central and southern California. Purple sage is generally found on relatively steep slopes. Purple sage is scattered throughout the project area, but is rarely present in enough numbers to be dominant. In the roadway alignments, it is most strongly associated with chamise, but California sagebrush and California buckwheat are also often present.

Sawtooth Goldenbush (Hazardia squarrosa) Scrub Shrubland Alliance

Sawtooth golden bush is a small, short-lived shrub with yellow composite flowers. This shrub alliance type is a transitional cover between disturbed annual grasslands and longer persisting coastal sage shrubland alliances, such as California sagebrush scrub. Sawtooth golden bush plants are scattered throughout the roadway alignments; however, the main concentration is along a drainage east of Romero Canyon Road. Other shrub species recorded in this vegetation type in the roadway alignments were California sagebrush and deerweed.

Scale Broom (Lepidospartum squamatum) Scrub Shrubland Alliance

Scale broom is a woody, broom-like shrub that can grow up to two meters (6.6 feet) tall and is generally found in alluvial deposits along streams, washes, and fans. Stands generally establish after heavy stream flows, and may require a flooding regime to persist on the landscape. In the roadway alignments, scale broom is present along a drainage just west of Romero Canyon Road. Other species present in this vegetation are thicketleaf yerba santa (*Eriodictyon crassifolium*), California sagebrush, and various non-native herbaceous species.

Thicketleaf Yerba Santa (Eriodictyon crassifolium) Scrub Provisional Shrubland Alliance

Thicketleaf yerba santa is an evergreen shrub that can grow to three meters (10 feet) in height. This species germinates following a disturbance and is relatively short lived, dying after 20 to 30 years. Within the roadway alignments, thicketleaf yerba santa is found scattered in a variety of locations. Other concurrent species include sawtooth goldenbush, California sagebrush, and deerweed.

Toyon (Heteromeles arbutifolia) Chaparral Shrubland Alliance

Toyon is a large evergreen shrub that can grow to seven meters (23 feet) in height, and is one of the most widely distributed shrubs in the foothills of southwestern California. Birds, small mammals, and other wildlife species are important in seed dispersal for this species. Toyon occurs in many chaparral and woodland alliances, from gradual slopes to steep rocky canyons. In the roadway alignments, Toyon chaparral is found in a narrow swath north of Sloan Canyon Road. Other associated shrub species are chamise, California sagebrush, and black sage.

Disturbed/Developed

Disturbed/developed is not a vegetation classification, but rather a land cover type. Areas mapped as this are either largely devoid of vegetation due to human development or are dominated by unnatural vegetation such as lawns and landscaping. Often areas surrounding development show high amounts of non-native ruderal species. In the roadway alignments, this cover type occurs next to the various residences present along Romero Canyon Road, Sloan Canyon Road, and Baringer Drive.

Areas by Plant Community in Roadway Alignments

Acreages of each plant community found in the roadway alignments are listed below in Table 5.3-2.



5. Environmental Analysis

BIOLOGICAL RESOURCES

**Table 5.3-2
Plant Communities in Roadway Alignments, Acres**

Plant Community	Area, Acres			
	Eastern Route		Southern Route	Total, 2 Access Routes (Canyon Hill Option)
	Via Mandolin/Harp/Romero	Via Canyon Hill		
Black sage scrub	0.51	0	0.47	0.47
California annual grassland	8.39	2.71	10.47	13.18
California buckwheat scrub	3.37	0	0.72	0.72
California sagebrush chaparral	0.13	3.31	0	3.31
California sagebrush scrub	0.95	4.23	1.26	5.49
California sagebrush-California buckwheat scrub	0.76	0	0	0
Chamise chaparral	10.73	12.44	7.12	19.56
Chamise-black sage chaparral	10.24	0.25	2.95	3.2
Coast live oak woodland	2.19	0	3.98	3.98
Deerweed scrub	1.71	5.98	0.85	6.83
Disturbed/developed	11.62	0.05	22.03	22.08
Hoary leaf ceanothus chaparral	1.77	0	0	0
Holly leaf cherry chaparral	1.97	0	0.95	0.95
Purple sage scrub	0	0	0.18	0.18
Sawtooth goldenbush scrub	0.46	0	2.42	2.42
Scalebroom scrub	0	0	0.75	0.75
Thick leaf yerba santa scrub	0.76	0	2.25	2.25
Toyon chaparral	2.4	0	0	0

Note: The acreages here do not include acreages reported in the Biological Report for Route 2, the segment of Romero Canyon Road that would be used as a gated emergency access. The only project-related improvements on the affected segment of Romero Canyon Road would be two turnarounds, one on either side of the proposed gate just south of the intersection of Romero Canyon Road with Baringer Road. The segment of Romero Canyon Road between the intersection with Baringer Road and the south site boundary is reported separately in the Biology Report as "Route 2 + 3" and is included in the southern route acreages listed here.

Wildlife

Project Site

Wildlife species observed or detected on the project site were characteristic of chaparral and oak woodland habitat. No amphibian species were observed during the survey, and they are unlikely to use the site due to the disturbed nature of streamside habitat. Bird species were the most abundant wildlife detected during the site visit. Mammal species observed or detected on the site include mule deer (*Odocoileus hemionus*) and coyote, as well as bobcat (*Lynx rufus*), domestic dog (*Canis familiaris*), and domestic horse (*Equus caballus*). A complete list of wildlife species observed or detected on the site can be found in Appendix E.

Roadway Alignments

Wildlife species observed in the project area were characteristic of the lowland coastal areas, along with some species more associated with inland regions. A majority of species were coastal scrub and chaparral associates.

5. Environmental Analysis

BIOLOGICAL RESOURCES

Sensitive Resources

Sensitive Natural Communities

Southern coast live oak riparian forest is listed on the California Natural Diversity Database (CDFG 2012) as occurring in the Val Verde and Whitaker Peak quadrangles. The project site is at the north end of the Val Verde quadrangle next to the Whitaker Peak quadrangle. The description of southern coast live oak riparian forest is very similar to that of coast live oak woodland identified in both the project site and the roadway alignments.⁴ However, the coast live oak woodland on the project site is highly disturbed and lacks the species diversity normally found in the community. Therefore, the coast live oak woodland onsite is not considered to provide the habitat value of a sensitive natural community. Coast live oak woodland was also found in the roadway alignments; coast live oak woodland in the roadway alignments is considered to be a sensitive natural community.

Sensitive Plants

Project Site

No sensitive plant species were observed onsite. One sensitive plant species known to occur in the region was observed onsite: Pierson's morning glory (*Calystegia piersonii*), which does not have either federal or state special status. Pierson's morning glory is on List 4 of the California Native Plant Society ranking system; List 4 is a watch list of species of limited distribution, but does not indicate that listed species are endangered or rare.

No other sensitive plant species was evaluated as having high potential to occur onsite. One other sensitive plant species was assessed as having moderate potential to occur onsite: Slender mariposa lily (*Calochortus clavatus* var. *gracilis*).



Roadway Alignments

Federally or state-listed (threatened or endangered) plant species were not observed during focused sensitive plant surveys. Eleven sensitive plant species were identified during the literature search as potentially occurring in the project area: club-haired mariposa lily (*Calochortus clavatus* var. *clavatus*), slender mariposa lily (*Calochortus clavatus* var. *gracilis*), Plummer's mariposa lily (*Calochortus plummerae*), Peirson's morning-glory (*Calystegia peirsonii*), San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*), slender-horned spineflower (*Dodecahema leptoceras*), San Gabriel bedstraw (*Galium grande*), Palmer's grapplinghook (*Harpagonella palmeri*), Ojai navarretia (*Navarretia ojaiensis*), short-joint beavertail cactus (*Opuntia basilaris* var. *brachyclada*), and Hubby's phacelia (*Phacelia hubbyi*). Of these, only slender mariposa lily was found to occur during focused surveys. Slender mariposa lily was found on about 0.04 acre at the north end of the alignment of Mandolin Canyon Road and in the southern part of the intersection of the Mandolin Canyon Road and Harp Canyon Road alignments. Slender mariposa lily is ranked 1B.2 by the California Native Plant Society, meaning that it is rare, threatened, or endangered in California and elsewhere, and is fairly threatened in California.

Habitat is present in and around the roadway alignments for five additional sensitive plant species: San Fernando Valley spineflower, slender-horned spineflower, slender mariposa lily, short-joint beavertail cactus, and Peirson's morning glory; however, only the slender mariposa lily was observed during the sensitive plant

⁴ South coast live oak riparian forest is described as: Open to locally dense evergreen riparian woodlands dominated by *Quercus agrifolia*. This type appears to be richer in herbs and poorer in understory shrubs than other riparian communities. Occurs in bottomlands and outer floodplains along larger streams, on fine-grained, rich alluvium.

5. Environmental Analysis

BIOLOGICAL RESOURCES

survey. Los Angeles County–protected oak trees were also observed in the project site. Brief descriptions of these plant species are found below.

San Fernando Valley Spineflower. The San Fernando Valley spineflower is a state-listed endangered, CNPS List 1B annual herb historically found in sandy soils within coastal scrub at elevations ranging from 150 to 1,220 meters (500–4,000 feet) above mean sea level (amsl). Some components of coastal scrub occur on the site, and there are multiple recorded occurrences of the spineflower within five miles of the site. Therefore, this species has a moderate potential for occurrence on the site.

Slender-Horned Spineflower. The slender-horned spineflower is a state and federally listed endangered, CNPS List 1B annual herb historically found in flood deposited terraces and washes within chaparral, coastal scrub, or alluvial fan sage scrub at elevations ranging from 200 to 760 meters (650–2,500 feet) amsl. Some components of chaparral and coastal scrub exist on the site, and there are a couple occurrences of the spineflower within 10 miles of the site. Therefore, this species has a low potential for occurrence on the site.

Slender Mariposa Lily. The slender mariposa lily is a CNPS List 1B perennial herb historically found in chaparral, coastal scrub, or valley and foothill grassland at elevations from 320 to 1000 meters (1,050–3,280 feet) amsl. Some components of chaparral, coastal scrub, and grassland exist on the site, and there are multiple occurrences within five miles of the site, as well as five observed occurrences on site. Although five plants were found to be present in the roadway alignments, it is likely that more undocumented occurrences exist within the study area due to the late season timing of the survey.

Short-Joint Beavertail Cactus. The short-joint beavertail cactus is a CNPS List 1B and Bureau of Land Management (BLM) sensitive perennial succulent historically found in chaparral, Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland at elevations from 425 to 1,800 meters (1,400–5,900 feet) amsl. Some components of chaparral exist on the site and there is an occurrence within 5 miles of the site. Therefore, this species has a low potential for occurrence on the site.

Peirson's Morning Glory. The Peirson's morning glory is a CNPS List 1B and BLM sensitive perennial herb historically found in chaparral, chenopod (or goosefoot) scrub, cismontane woodland,⁵ coastal scrub, lower montane coniferous forest, and valley and foothill grassland at elevations from 30 to 1,500 meters (100–4,920 feet) amsl. Some components of chaparral exist on the site and there is a known occurrence within one mile of the site. Therefore, this species has a moderate potential for occurrence on the site.

Oak Trees

Project Site

There are 30 coast live oak trees onsite within parcels 2 and 3 of the project site. An additional 24 coast live oak trees were removed from parcels 1 and 4 of the site in 2010 as allowed by Oak Tree Permit 89-213. Three additional coast live oak trees identified in parcels 2 and 3 in a 1989 survey of the site did not exist in 2010 due to fire or other natural causes (RJA 2010).

Roadway Alignments

The roadway alignments contain 140 oak trees (qualifying for protection under the county oak tree ordinance).

⁵ Cismontane southern California is the part seaward of the crests of the Transverse and Peninsular ranges.

5. Environmental Analysis

BIOLOGICAL RESOURCES

Sensitive Wildlife

Project Site

No sensitive wildlife species were observed on the project site. Four sensitive species were evaluated as having high potential to occur onsite: Cooper's hawk (*Accipiter cooperii*), white-tailed kite (*Elanus leucurus*), spotted bat (*Euderma maculatum*), and pallid bat (*Antrozous pallidus*). Three additional species were assessed as having moderate potential to occur onsite: western mastiff bat (*Eumops perotis californicus*), San Diego desert woodrat (*Neotoma lepida intermedia*), and coast horned lizard (*Phrynosoma coronatum blainvillei*).

Roadway Alignments

The literature search documented 22 sensitive wildlife species in the quadrangles covering the project vicinity (6 listed species, 17 California Species of Concern). To this was added an additional 22 sensitive species that were thought to either have potential to occur or were known to be of interest to regulatory agencies for projects in the Castaic area. The listed species documented by the search included: Santa Ana sucker (*Catostomus santaanae*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*), arroyo chub (*Gila orcuttii*), California condor (*Gymnogyps californianus*), coastal California gnatcatcher (*Polioptila californica californica*), California red-legged frog (*Rana aurora draytonii*), and mountain yellow-legged frog (*Rana muscosa*). No suitable habitat for these species was determined to be present on the site, and they are not expected to occur.

The sensitive species with the most potential to occur on the property are discussed in detail below.

Western Spadefoot. The western spadefoot (*Spea hammondi*) is a California Species of Special Concern (CSC). Spadefoots are an amphibian species that inhabits temporary pools, such as road pools and vernal pools, and can be found wherever such pools form in the coastal lowlands. The species also is known to use riparian areas, where similar temporary pools are present. During the summer months, spadefoot will bury themselves in nearby habitat areas. This species is only found on the surface during and after heavy rains that fill their breeding pools. The species historically occurred throughout much of California but has been impacted by development of its habitat areas. Spadefoot habitat was not thought to be present through most of the site, due to the aridity and lack of apparent pooling areas, but some habitat does occur along each of the routes, usually in the form of man-made features such as detention basins. The species was considered to have a low potential for occurrence.

Coast Horned Lizard. The coast horned lizard (*Phrynosoma coronatum blainvillei*) is a CSC species. Horned lizards are often associated with dry scrubland habitat areas, where their chief food source are harvester ants (*Pogonomyrmex sp.*). Horned lizard habitat occurs throughout much of southern California, but much of its historic habitat, coastal sage scrub, has been lost to development. The species is still found in numbers in most of the habitat areas remaining, although its distribution is heavily connected with areas where both the habitat and primary food source are both present. Within the project area, horned lizards have a moderate potential to occur. Harvester ant colonies were observed in several places, and the scrubland habitat appears suitable for the species. The project could affect the species, if present, but generally the horned lizard is considered to be of low enough sensitivity that impacts are not mitigated.

Burrowing Owl. The burrowing owl (*Athene cunicularia*) is a CSC species. Burrowing owls are a species of owl that occupies most open habitat areas, including grasslands, desert scrub areas, and disturbed areas. The species can be found in agricultural fields and vacant lots as well, where it can be remarkably persistent. Owls historically occurred throughout much of California, but it has been impacted by development of many



5. Environmental Analysis

BIOLOGICAL RESOURCES

of its habitat areas. Burrowing owls are typical yearlong residents of areas where they are found, but during the winter months they typically move around locally to locate new burrow sites. The species is considered semi-migratory due to its habit of relocating to new areas outside of the breeding season. Burrowing owls require a burrow for nesting and will use a variety of burrow types. They typically nest in abandoned mammal burrows (primarily ground squirrel) but can also be found using pipes, culverts, discarded blocks of concrete, gaps under concrete slabs, and other similar habitats. The rolling topography and vegetation communities present within the project area are not highly typical for the owl, but there is some habitat present and some ground squirrels are present that could create burrow habitat. Owls were considered to have a low potential for occurrence, and so the project has a limited potential to adversely affect the species.

California Condor. The California condor (*Gymnogyps californianus*) is an endangered species at both state and federal levels. Once considered extinct in the wild, the species is now being captively bred and released at four sites across the southwest. One of the release sites is within Ventura County far to the northwest of the project area within the Los Padres National Forest. Today there are estimated to be about 56 condors in Los Padres National Forest. The wild condor population is not yet considered to be stabilized. Condors historically have had a home range of many square miles and they are known to wander very far in search of carrion and nesting areas. Some released condors, for instance, have been observed as far as 50 to 100 miles away from their release sites. Condors continue to be threatened by human disturbances, both direct and indirect. Within the project area, it is possible that condors could be observed since the habitat is fairly open and natural and would potentially attract condors. However, there is no potential condor nesting habitat on site, and any birds that visited the site would be expected to be transitory, so the project is not expected to adversely impact the species.

American Badger. The American badger (*Taxidea taxus*) is a CSC species. Badgers historically occurred throughout the Central Valley, deserts, and coastal plain of California; however, many former populations have vanished. The badger prefers open habitats of varying sorts, including grasslands, scrublands, and even agricultural areas. Burrow locations tend to be in the open and fairly obvious due to their size and their form. Since badgers are seen more and more infrequently, they are considered to be a species in potential decline. Within the project area, no evidence of badgers was observed, but the species could be present due to the type of habitat present and available food sources.

Raptors and Migratory Birds. All raptor species are protected from “take” pursuant to California Fish and Game Code Section 3503.5 and by the federal Migratory Bird Treaty Act. The oak woodland habitat and cliffs on the site provide potential nesting habitat for several raptors, including Cooper’s hawk, white-tailed kite, and red-tailed hawk (*Buteo jamaicensis*). Migratory bird species are likely to nest within the trees and shrubs occurring throughout the site. There is a moderate potential for occurrence on the site during nesting season. If ground disturbance is scheduled to occur during nesting season, the project area should be surveyed for the presence nesting raptors. If ground disturbance occurs outside of nesting season, no surveys would be required.

Wildlife Movement Corridors

Linkages and corridors facilitate regional animal movement and are generally centered around waterways, riparian corridors, flood control channels, contiguous habitat, and upland habitat. Drainages generally serve as movement corridors because wildlife can move easily through these areas, and fresh water is periodically available. Corridors also offer wildlife unobstructed terrain to forage, and they allow for the dispersal of young individuals. Ridgelines may also serve as movement corridors.

5. Environmental Analysis

BIOLOGICAL RESOURCES

Project Site and Roadway Alignments

Most of the site is open space. There are several drainages and ridgelines on the site that connect to large tracts of open land north, east, and west of the site. There is rural residential use south of the site. The drainages and ridgelines eventually lead to developed areas in the Community of Castaic and Interstate 5, south and east of the site, and thus do not provide for long-distance east–west wildlife movement. The site does not seem to be crucial in connecting isolated areas of habitat; therefore, it serves more as wildlife habitat and not a wildlife corridor or linkage.

Significant Ecological Areas

The County of Los Angeles has designated 62 sites as SEAs. These sites were selected in an effort to identify areas that possess uncommon, unique, or rare biological resources, and areas that are prime examples of the more common habitats and communities within Los Angeles County. The project site and the roadway alignments are not within a Los Angeles County–designated SEA.

Jurisdictional Waters and Wetlands

Project Site

Waters of the United States

Five drainages were identified onsite. All five drainages are ephemeral, that is, water flows briefly in the drainages during and after rainstorms. The total acreage of Waters of the US onsite is 0.355 acre, and the five jurisdictional drainages total 11,310 linear feet in length. Most of the drainages onsite are unvegetated; however, parts of some of the drainages support grass and other herbaceous plant species. Acreages and linear feet of Waters of the US are shown below in Table 5.3-3, and Waters of the US onsite are mapped on Figure 5.3-2, *Jurisdictional Delineation of Project Site*.



Table 5.3-3
Waters of the US Onsite

<i>Drainage</i>	<i>Acreage</i>	<i>Linear Feet</i>
1	0.153	3,604
2	0.110	3,967
3	0.040	1,748
4	0.040	1,735
5	0.012	256
Total	0.355	11,310

Wetlands

No wetlands were identified onsite. A small wetland area was identified onsite in a previous 2006 delineation in Drainage 3 (see Figure 5.3-2). At the time of the 2006 delineation, water flowing in Drainage 3 collected into a small pool; a landslide prevented water from flowing into Drainage 2 as occurred historically. Since 2006 part of the flow in Drainage 3 has resumed flowing into Drainage 2, and the wetland area previously identified no longer qualifies as jurisdictional wetland.

5. Environmental Analysis

BIOLOGICAL RESOURCES

Waters of the State

Waters of the State included all of the Waters of the US identified onsite. Waters of the State extend somewhat beyond Waters of the US, to larger drainage channels that would contain heavier water flows occurring during extremely heavy rainfall. Waters of the State onsite total 1.209 acre. Waters of the State onsite are entirely unvegetated; there is no riparian vegetation onsite. Waters of the State are mapped on Figure 5.3-2.

Roadway Alignments

Three drainages were identified in the roadway alignments; all are ephemeral streams, that is, they convey stormwater briefly after storms.

Drainage 1 is in Romero Canyon, crossing North Romero Canyon Road at the west end of the eastern access route (Option A via Mandolin Canyon Road, Harp Canyon Road, and North Romero Canyon Road) and passing through the alignment of Romero Canyon Road south of the site. The drainage is unvegetated throughout its entire length, with a mixture of vegetation types along the banks. The uppermost portions of the drainage are surrounded by chaparral and sage scrub, whereas the southern portions contain a mixture of residential developments and native habitat patches. A few oak trees are scattered along the path of this drainage. The mainstem of the drainage varies from two to five feet in width. Two drainage forks enter into the drainage along its path and are included in the calculation for the feature. These forks are typically one to three feet in width and are unvegetated, with one occurring along Masaley Road and the other occurring a little farther to the south.

Drainage 2 is in Sloan Canyon, crosses the eastern access route (at the Mandolin Canyon Road/Harp Canyon Road intersection or across Canyon Hill Road, depending on the option developed), and then passes along the southern access route much of the way along south Sloan Canyon Road from just south of Baringer Road to Hillcrest Parkway. Similar to Drainage 1, this feature begins in a mixture of chaparral and sage scrub, but there are also oaks present along its entire length. Oak woodland represents about 3.47 acres of the vegetation types along the southern access route. The feature enters into a more developed area along the southern portion of the southern route. The mainstem of the drainage varies from three to eight feet in width. Two drainage forks enter into the drainage along its path and are included in the calculation for the feature.

Drainage 3 is entirely located within the eastern access route, where it begins slightly east of Drainage 2. This drainage follows the upper part of Sloan Canyon Road and flows eastward towards the more developed portions of Castaic. There are several culverts along its length where it traverses back and forth under Sloan Canyon Road, and it becomes channelized toward the eastern part of Route 1 where development is most concentrated. The mainstem of the drainage varies from two to five feet in width. Four drainage forks enter into the drainage along its path and are included in the calculation for the feature. These forks are typically one to three feet in width and are unvegetated.

Waters of the US

Waters of the US acreage identified in the roadway alignments is listed below in Table 5.3-4.

5. Environmental Analysis

BIOLOGICAL RESOURCES

Table 5.3-4
Waters of the US in Roadway Alignments

	Drainage 1 (Romero Canyon)		Drainage 2 (Sloan Canyon)		Drainage 3 (unnamed)		Total	
	Acres	Linear Feet	Acres	Linear Feet	Acres	Linear Feet	Acres	Linear Feet
Eastern Access Route (Route 1)	0.029	1,238	0.039	1,891	0.320	5,885	0.388	9,014
Southern Access Route (Route 3)	0.108	1,315	0.233	3,632	0	0	0.341	4,947
Total	0.137	2,553	0.272	5,523	0.32	5,885	0.729	13,961

Note: The acreages here do not include acreages reported in the Biological Report for Route 2, the segment of Romero Canyon Road that would be used as a gated emergency access. The only project-related improvements on the affected segment of Romero Canyon Road would be two turnarounds, one on either side of the proposed gate just south of the intersection of Romero Canyon Road with Baringer Road. The segment of Romero Canyon Road between the intersection with Baringer Road and the south site boundary is included in Route 3 in the Biology Report and is included in the southern route acreages listed here.

Wetlands

No wetlands were identified in the roadway alignments.

Waters of the State

Waters of the State acreage identified in the roadway alignments is listed below in Table 5.3-5.

Table 5.3-5
Waters of the State in Roadway Alignments

	Drainage 1 (Romero Canyon)		Drainage 2 (Sloan Canyon)		Drainage 3 (unnamed)		Total	
	Acres	Linear Feet	Acres	Linear Feet	Acres	Linear Feet	Acres	Linear Feet
Eastern Access Route (Route 1)	0.085	1,238	0.107	1,891	0.664	5,885	0.856	9,014
Southern Access Route (Route 3)	0.344	1,315	0.559	3,632	0	0	0.903	4,947
Total	0.429	2,553	0.666	5,523	0.664	5,885	1.759	13,961

Note: The acreages here do not include acreages reported in the Biological Report for Route 2, the segment of Romero Canyon Road that would be used as a gated emergency access. The only project-related improvements on the affected segment of Romero Canyon Road would be two turnarounds, one on either side of the proposed gate just south of the intersection of Romero Canyon Road with Baringer Road. The segment of Romero Canyon Road between the intersection with Baringer Road and the south site boundary is included in Route 3 in the Biology Report and is included in the southern route acreages listed here.

5.3.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

- BIO-1 Have a substantial effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans,



5. Environmental Analysis

BIOLOGICAL RESOURCES

policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

- BIO-2 Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
- BIO-3 Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- BIO-4 Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.
- BIO-5 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- BIO-6 Conflict with the provisions of an adopted habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The Initial Study, included as Appendix A, substantiates that impacts associated with Threshold BIO-6 would be less than significant. This impact will not be addressed in the following analysis.

5.3.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.3-1: DEVELOPMENT OF THE PROPOSED PROJECT WOULD IMPACT THE FOLLOWING SENSITIVE SPECIES: SLENDER MARIPOSA LILY (*CALOCHORTUS CLAVATUS* VAR. *GRACILIS*) AND PEIRSON'S MORNING GLORY (*CALYSTEGIA PIERSONII*) [THRESHOLD BIO-1]

Impact Analysis:

Sensitive Plants

Project Site

Two individuals of Peirson's morning glory were observed on site within the proposed landslide removal area west of the school site. Peirson's morning glory has a CNPS rank of 4.2, which is a watch list of species of limited distribution; thus, impacts to Peirson's morning glory would not be considered significant. Rare plant species surveys for seven species did not identify any of those species on the project site, and those species are not expected to occur on site.

Roadway Alignments

Development of access road Option A, in either access road scenario 1 or 2, would impact slender mariposa lily found on about 0.04 acre in and around the proposed alignment of Mandolin Canyon Road from the south boundary of Tract 46443 to just south of the proposed intersection of Mandolin Canyon Road with

5. Environmental Analysis

BIOLOGICAL RESOURCES

Harp Canyon Road. Development of access road Option B would not impact slender mariposa lily. None of the other targeted sensitive species for which focused surveys were conducted were identified within the roadway alignments, and no federally or state-listed (threatened or endangered) plant species were identified in the roadway alignments. Habitat moderately suitable for San Fernando Valley spineflower occurs in the roadway alignments; San Fernando Valley spineflower is state-listed endangered and on CNPS List 1B.

Sensitive Animals

Project Site and Roadway Alignments

The project would clear about 250 acres, most of which is native habitat. No federal- or state-listed endangered or threatened wildlife species were observed during the survey of the property, and none are expected to occur based on the lack of suitable habitat. A northern harrier (CSC) was observed foraging in the coastal sage-chaparral scrub along the eastern site boundary. This species is a ground nester and is not likely to nest on the property. Additionally, one Cooper's hawk, a CDFG watch list species, was observed during surveys. It is possible that the San Diego (coast) horned lizard (*Phrynosoma blainvillii*), white-tailed kite (*Elanus leucurus*), rufous-crowned sparrow (*Aimophila ruficeps*), pallid bat (*Antrozous pallidus*), spotted bat (*Euderma maculatum*), western mastiff bat (*Eumops perotis*), and San Diego woodrat (*Neotoma lepida intermedia*) could inhabit the site, but focused surveys would be needed to detect these species. Due to their relatively low levels of sensitivity, such focused surveys are not needed or recommended.

The burrowing owl, a CSC species, has a low potential to occur in the open areas of the property. No burrowing owls or burrowing signs (e.g., burrows, whitewash, pellets, feathers) were observed during the surveys.

Roadway Alignments

The burrowing owl has a low potential to occur in the open areas of the alignments. Focused surveys for the owl are recommended due to its level of sensitivity and potential for occurrence.

The California condor has a limited potential to occur on the site as a transitory visitor. It would not be considered a resident of the project area due to the lack of potential nesting areas. Project development would not have significant impacts on the condor.

IMPACT 5.3-2 PROJECT DEVELOPMENT WOULD INVOLVE REMOVAL OF 30 OAK TREES FROM THE PROJECT SITE AND UP TO 140 OAK TREES FROM THE ROADWAY ALIGNMENTS. [THRESHOLD BIO-5]

Impact Analysis: The 30 coast live oak trees on the project site (that qualify for protection under the County's Oak Tree Ordinance) are all within the project grading footprint. Of the 140 oak trees in the roadway alignments, 19 are along the alignment of Romero Canyon Road south of Baringer Road where the project would not involve oak tree removals. The remaining 121 trees are in study areas 300 feet wide along the alignments. The final design of the roadways has not yet been completed; therefore, the number of oak trees that would be removed by the project cannot be determined currently. As a conservative analysis, it is assumed that all 121 oak trees in the alignments of Valley Creek Road (offsite), Sloan Canyon Road, Mandolin Canyon Road, Harp Canyon Road, and North Romero Canyon Road would be removed by the project. While the Los Angeles County Oak Tree Ordinance does not apply to the school district, the District is using the ordinance and CDFG permit requirements to determine impact significance and mitigation requirements.



5. Environmental Analysis

BIOLOGICAL RESOURCES

IMPACT 5.3-3: DEVELOPMENT OF THE PROPOSED PROJECT WOULD RESULT IN THE LOSS OF UP TO 3.98 ACRES OF COAST LIVE OAK WOODLAND, A SENSITIVE PLANT COMMUNITY, IN ROADWAY ALIGNMENTS. [THRESHOLD BIO-2]

Impact Analysis:

Project Site

No sensitive vegetation types were identified on the project site. While southern coast live oak riparian forest is listed as a sensitive vegetation type occurring in the region on the CNDDDB, and the disturbed coast live oak woodland has some similarity to the former plant community, the disturbed coast live oak woodland onsite is highly disturbed and lacks the species diversity normally found in the community. Therefore, the coast live oak woodland onsite is not considered to provide the habitat value of a sensitive natural community.

Roadway Alignments

The alignments of the eastern and southern access routes contain 3.98 acres of coast live oak woodland. Some of the coast live oak woodland found in the roadway alignments occurs around disturbed and developed residential sites; however, it is assumed here that all of the coast live oak woodland in the roadway alignments is a sensitive plant community. The alignments surveyed for the Biology Report were 300 feet wide; the actual disturbance areas would be 80-foot-wide rights-of-way plus scattered areas to be graded for landslide removals. Thus, the actual disturbance area would be somewhat smaller than 3.98 acres.

IMPACT 5.3-4: THE PROPOSED PROJECT WOULD IMPACT UP TO APPROXIMATELY 0.96 ACRE OF WATERS OF THE US AND 2.644 ACRES OF WATERS OF THE STATE. [THRESHOLD BIO-3].

Impact Analysis:

Project Site

Project development would destroy 0.212 acre of Waters of the US onsite and 0.019 acre of Waters of the US offsite, for a total of 0.231 acre of impact area. The project would destroy 0.831 acre of Waters of the State onsite and 0.054 acre of Waters of the State offsite, for a total of 0.885 acre of impact area. No wetlands were identified on the project site.

Roadway Alignments

Jurisdictional areas identified in the roadway alignments are 0.729 acre of Waters of the US and 1.759 acres of Waters of the State. The roadway alignments surveyed for the Biology Report were 300 feet wide. The impact areas for road construction would be 80-foot-wide rights-of-way plus scattered areas to be graded for landslide removals. Access road design has not been finalized and is subject to county approval, and thus the jurisdictional areas that would be impacted by access road development cannot be specified precisely at this time. Impact areas would be less than 0.729 acre of Waters of the US and 1.759 acres of Waters of the State.

5. Environmental Analysis

BIOLOGICAL RESOURCES

IMPACT 5.3-5: THE PROPOSED PROJECT WOULD AFFECT WILDLIFE MOVEMENT. [THRESHOLD BIO-4]

Impact Analysis:

Overland Wildlife Movement

Project development would not significantly impact use of the site as a wildlife movement corridor. The site does not seem to be crucial in connecting isolated areas of habitat; therefore it serves more as wildlife habitat and not a wildlife corridor or linkage.

Nesting Migratory Birds

Trees and shrubs onsite and in the roadway alignments could be used by nesting migratory birds. The project would clear about 250 acres, most of which are currently vegetated, and including 71.4 acres on the school site, 86.6 acres of graded slopes and landslide removals, and 92 acres of roadways. Site clearance would remove trees and shrubs in the 250 acres to be cleared, and thus could remove vegetation used for nesting by migratory birds.

5.3.4 Cumulative Impacts

Related projects would remove vegetation from their project sites. The biological resources survey for the proposed project noted 21 sensitive species of plants, 5 of mammals, 3 of birds, 2 of reptiles, a sensitive amphibian species, and a sensitive insect species documented as occurring in the project region. Related projects would develop 1,045 single-family residences and one 900-student elementary school. Related projects, as would the proposed project, would be required to obtain CEQA clearance, including identifying significant impacts to sensitive species and requiring mitigation measures to reduce impacts to less than significant to the degree feasible.



5.3.5 Existing Regulations and Standard Conditions

Federal

- Endangered Species Act (United States Code, Title 16, Sections 1531 et seq.)
- Migratory Bird Treaty Act (United States Code, Title 16, Sections 703-712)
- Clean Water Act Sections 401, 402, and 404 (United States Code, Title 33, Sections 1251 et seq.)

State

- California Endangered Species Act (California Fish and Game Code, Section 2080)
- California Fish and Game Code Section 1600

Local

- Los Angeles County Oak Tree Permits (Los Angeles County Code Sections 22.56.2050 et seq. (Note that the District is a state agency and the provisions of this ordinance do not apply.)

5.3.6 Level of Significance Before Mitigation

Without mitigation, the following impacts would be **significant**:

5. Environmental Analysis

BIOLOGICAL RESOURCES

- Impact 5.3-1 Development of the proposed project would impact the following sensitive species: slender mariposa lily and Peirson's morning glory.
- Impact 5.3-2 Project development would involve removal of 30 oak trees from the project site and up to 140 oak trees from the roadway alignments.
- Impact 5.3-3 Development of the proposed project would result in the loss of up to 3.98 acres of coast live oak woodland, a sensitive plant community, in roadway alignments.
- Impact 5.3-4 The proposed project would impact up to 0.96 acre of Waters of the U.S. and 2.644 acres of Waters of the State.
- Impact 5.3-5 The proposed project would affect wildlife movement.

5.3.7 Mitigation Measures

Impact 5.3-1

BIO-1 If the District chooses to develop the access roads under Option A, before the beginning of clearing operations on the alignments of Mandolin Canyon Road or Harp Canyon Road, the District shall have a qualified biologist collect bulbs from slender mariposa lily. The bulbs shall be planted in coastal sage scrub habitat preserved and restored or enhanced pursuant to Mitigation Measure BIO-7.

BIO-2 Prior to construction, a survey for burrowing owls shall be conducted by a qualified biologist within the breeding season prior to ground disturbance, which extends from February 1 to August 31. Burrowing owl surveys shall be conducted following the California Department of Fish and Game (CDFG) Staff Report on Burrowing Owl Mitigation (March 7, 2012). Should burrowing owls be found on site during the pre-construction survey, they should be relocated and mitigated in accordance with the CDFG staff report. Consultation with CDFG should occur for concurrence prior to implementing any relocation measures, to ensure no potential "take" of burrowing owls.

Impact 5.3-2

BIO-3 The District's school facilities project manager or their designee and the project landscape contractor, under the supervision of the project biologist, shall replace oak trees removed by the project at a minimum of 2 to 1 ratio. All coast live oaks removed shall be replaced with oak trees of the same species. All replacements shall be completed within one year after the beginning of site clearing.

Impact 5.3-3

Implementation of Mitigation Measure BIO -3

BIO-4 During construction, the District's school facilities project manager or their designee and the project landscape contractor, under the supervision of the project biologist, shall plant and monitor replacement trees for any native trees removed or damaged during construction operations. All initial plantings of replacement trees shall be completed by one year after the start of construction. Any native trees, with the exception of oaks, that are removed or damaged

5. Environmental Analysis

BIOLOGICAL RESOURCES

shall be replaced in kind at a 5:1 ratio. Replacement trees shall be one gallon container size. Minimum separations for plantings of the same species shall be 8 feet for arroyo willow (*Salix lasiolepis*), black willow (*Salix goodingii*), sandbar willow (*Salix exigua*), red willow (*Salix laevigata*); 20 feet for sycamore (*Platanus racemosa*), California laurel (*Umbellularia californica*), black walnut (*Juglans californica*), cottonwood (*Populus sp.*), coast live oak (*Quercus agrifolia*), canyon oak (*Quercus chrysolepis*), and scrub oak (*Quercus berberidifolia*); and 15 feet for white alder (*Alnus rhombifolia*) based on recommendations by the restoration biologist. Plantings shall have a minimum of 80 percent survival, by species, the first year and 100 percent survival thereafter, and/or shall attain 75 percent cover after three years. The plantings shall maintain 90 percent cover after five years for the life of the project. The area shall be weeded and maintained clear of trash for the entire restoration period. No single species shall constitute more than 50 percent of the vegetative cover. Replacement trees should reach the following minimum growth at the end of three and five years after planting; the District shall be responsible for replacing trees that do not meet survival or growth targets.

Impact 5.3-4

BIO-5 During construction, the District's school facilities project manager or their designee and the project landscape contractor, under the supervision of the project biologist, shall enhance the proposed drainage channel and swale to be built near the northeast and east site boundaries with 1.0 acre of soft unvegetated bottom channel and 1.0 acre of oak/elderberry/coastal sage scrub habitat. Planting of container plants and seeding via hydroseeding shall be used for creation of habitats.

- Weed abatement measures shall begin in October and continue through February 28 to take advantage of the winter rainy season and to avoid the migratory bird nesting season. Removing weeds, either with herbicide or mowing, following germination and before seed-set, will reduce the amount of seed added to the seed bank in the soil. Vegetation shall be installed following weed abatement and after the first wetting rains between October 1 and March 1 to take advantage of winter rainy season, dormancy of foliage, and rooting period to ensure optimum survival of plantings. Restoration and enhancement efforts shall commence within one year of the start of construction.
- Seeds collected from Los Angeles County within the watershed, if possible, but no more than 30 miles of the project site, shall be supplied by a qualified commercial seed collector/supplier with experience in native seed collections.
- All riparian scrub container plants shall be one gallon size. The riparian scrub container plant palette shall consist of a mix of the following species: mule fat, sandbar willow, black willow, red willow, arroyo willow, blue elderberry, and coyote bush. The coastal sage scrub container plant palette shall consist of a mixture of chamise, California sagebrush, and toyon. The oak woodland plantings shall consist of coast live oak, scrub oak, and canyon live oak.
- At the discretion of the restoration biologist, the riparian scrub seed mix shall consist of the following species: common yarrow (*Achillea millefolium*), California brome (*Bromus carinatus*), Chinese houses (*Collinsia heterophylla*), California poppy (*Eschscholzia californica*), meadow barley (*Hordeum brachyantherum*), giant wildrye (*Leymus condensatus*), deerweed (*Lotus scoparius*), California melicgrass (*Melica californica*), small-flowered melicgrass (*Melica imperfecta*), deergrass (*Mehlenbergia rigens*), purple



5. Environmental Analysis

BIOLOGICAL RESOURCES

needlegrass (*Nassella pulchra*), California beeplant (*Scrophularia californica*), and blue-eyed grass (*Sisyrinchium bellum*).

- At the discretion of the restoration biologist, the coastal sage scrub seed mix shall consist of the following species: chamise, California sagebrush, summer holly (*Comarostaphylis diversifolia*), California buckwheat, golden yarrow (*Eriophyllum confertiflorum*), California poppy, toyon, goldfields (*Lasthenia glabrata*), deerweed, arroyo lupine (*Lupinus succulentus*), white sage (*Salvia apiana*), blue-eyed grass, small fescue (*Vulpia microstachys*), and mission manzanita (*Xylococcus bicolor*).

BIO-6 The District's school facilities project manager or their designee, the project construction contractor, and the project landscape contractor, all under the supervision of the project biologist, shall create at least 1.0 acre of stream channel and restore riparian scrub vegetation along the channel in the northwest corner of the property outside of the project grading footprint. The timing and methods of weed abatement and planting, and the plant palettes for container and hydroseeded riparian scrub plants, shall be the same as those specified in Mitigation Measure BIO-5. All planting shall be completed within one year after the start of site clearing.

BIO-7 The District's school facilities project manager or their designee, the project landscape contractor, and the project biologist shall preserve and restore or enhance the specified acreages of the following vegetation types in the northwest corner of the property outside of the project grading footprint. The timing and methods of weed abatement and planting, and the plant palettes for container and hydroseeded riparian scrub plants, shall be the same as those specified in Mitigation Measure BIO-5. All planting shall be completed within one year after the start of site clearing.

- 1.0 acre of coast live oak woodland
- 1.0 acre of chaparral containing chamise as a principal species
- 2.97 acres of coastal sage scrub

BIO-8 Prior to the beginning of project construction, the project civil engineer shall plan and install measures to minimize turbidity/siltation. This may require that the work site be isolated and that stormwater be diverted around the work area by means of a barrier, temporary culvert, new channel, or other means approved by CDFG. Precautions may also include placement of silt fencing, sand bags, and/or the construction of silt catchment basins, so that silt or other harmful materials are not allowed to pass to downstream reaches. The method used to prevent siltation shall be monitored by the project biologist and cleaned/repared weekly by the operator. The placement of any structure or materials in the stream for this purpose, not included in the original project description or CDFG-approved water pollution/water diversion plan shall be coordinated with CDFG.

Erosion control measures may include sandbags, silt fencing, slope breakers, trenches, or dissipaters. Erosion control measures shall not contain materials such as hay bales or non-rice straw mulch, etc., that may contaminate the site. These measures preclude the introduction of exotic weedy species into the seed bank of areas with native vegetation. Preparation shall be made so that runoff from steep, erodible surfaces will be diverted into stable areas with little erosion potential. Frequent water checks shall be placed on dirt roads, cat tracks, or other work

5. Environmental Analysis

BIOLOGICAL RESOURCES

trails to control erosion. Areas of disturbed soils with slopes toward a stream or lake shall be stabilized to reduce erosion potential. Planting, seeding, and mulching is conditionally acceptable. Where suitable vegetation cannot reasonably be expected to become established, non-erodible materials, such as coconut fiber matting, shall be used for such stabilization. Any installation of non-erodible materials not described in the original project description shall be coordinated with the CDFG.

The project construction contractor shall construct an effective water velocity dissipation device at any outlet structures to minimize erosion. Rock, rip-rap, or other erosion protection shall be placed in areas where vegetation cannot reasonably be expected to become reestablished. This condition shall be approved by the CDFG prior to project commencement.

Drainage and sedimentation control devices shall be routinely cleaned, maintained, and repaired prior to and during the rainy season. Control devices shall be inspected at least monthly. In addition to the monthly inspection, control devices shall be inspected within 24 hours of a significant rain event (0.5 inch of rainfall or greater). All repairs to these systems shall be immediately executed to minimize erosion problems.

Impact 5.3-5

BIO-9 Prior to any construction during the raptor nesting season, January 31 to September 1, a qualified biologist shall conduct a site survey for active nests two weeks prior to any scheduled clearing, grading, or construction activities. If an active nest is located, then no construction work shall be conducted within a 500-foot radius from the nest until the young have fledged and are independent of the adults. The biologist shall direct placement of a fence to create a minimum 500-foot-radius avoidance area.

BIO-10 Prior to any vegetation disturbance between March 1 and September 15, a qualified biologist shall conduct a survey for nesting birds in all breeding/nesting habitat within the project site and adjacent to the project site within 300 feet of disturbance areas. Nesting bird surveys shall be conducted no earlier than 30 days prior to initiation of ground or vegetation disturbance by the project. If no breeding/nesting birds are observed and concurrence has been received from CDFG, site preparation and construction activities may begin. If breeding activities and/or an active bird nest is located and concurrence has been received from CDFG, the breeding habitat/nest site shall be fenced by the biological monitor a minimum of 300 feet (500 feet for raptors) in all directions, and this area shall not be disturbed until the nest becomes inactive, the young have fledged, the young are no longer being fed by the parents, the young have left the area, and the young will no longer be impacted by the project. If the qualified biologist determines that narrower buffer between the construction activities and the observed active nests is warranted, the biologist may submit a written explanation as to why (e.g., species-specific information; ambient conditions and bird's habituation to them; and terrain, vegetation, and birds' lines of sight between the construction activities and the nest and foraging areas) to the District and, upon request, CDFG. Based on the submitted information, the District, acting as the lead agency (and CDFG, if CDFG requests) will determine whether to allow a narrower buffer.

If any threatened or endangered avian species are observed on the project site, no work shall occur during the breeding season (March 1 and September 15) to avoid direct or indirect (noise) take of listed species. If any formally state or federal listed animal or plant species are observed



5. Environmental Analysis

BIOLOGICAL RESOURCES

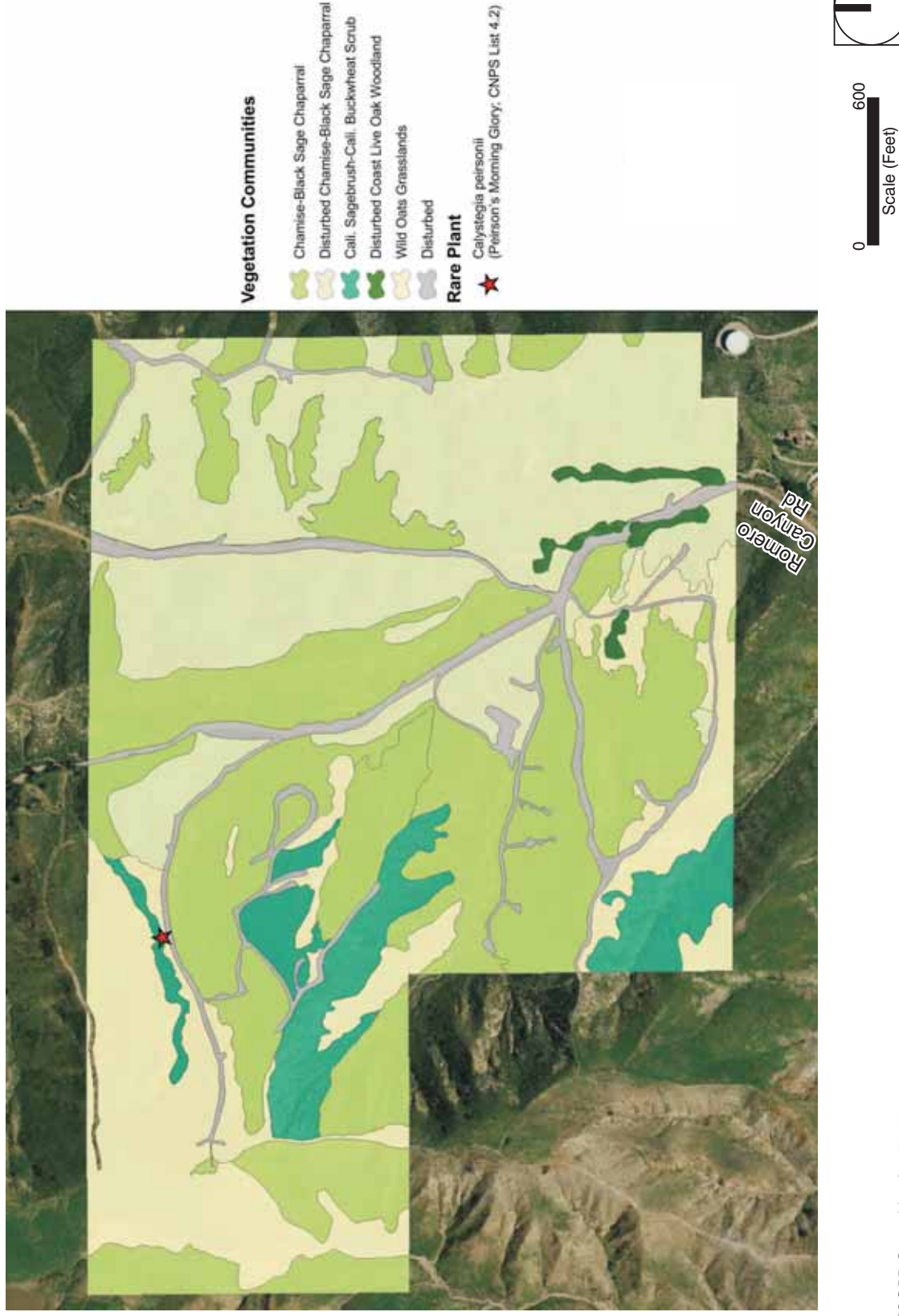
on the property, then State and/or Federal threatened/endangered species permits may be required prior to commencing project activities.

5.3.8 Level of Significance After Mitigation

The mitigation measures identified above would reduce potential impacts associated with biological resources to a level that is less than significant. Therefore, no significant unavoidable adverse impacts relating to biological resources remain.

5. Environmental Analysis

Vegetation Communities, Project Site



Source: ECORP Consulting Inc 2010

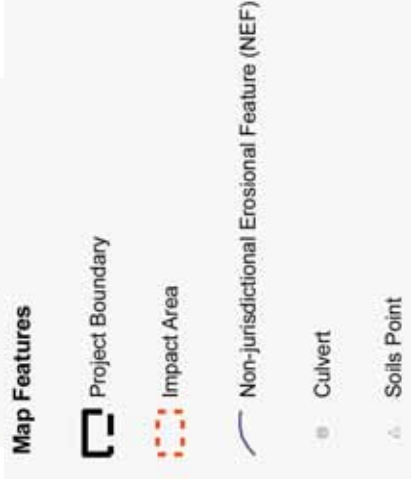
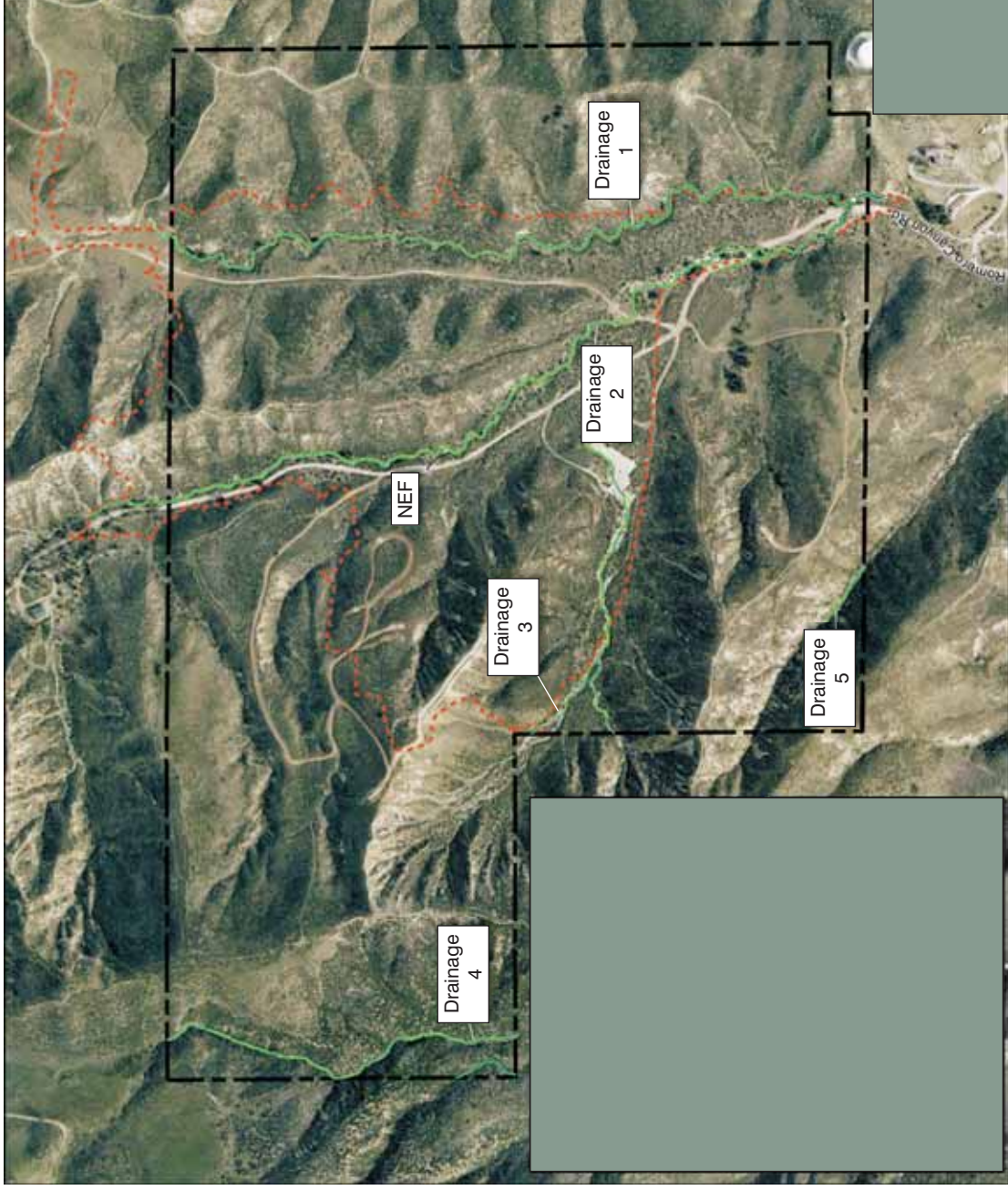
Castaic High School Draft EIR

5. *Environmental Analysis*

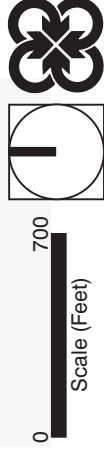
BIOLOGICAL RESOURCES

This page intentionally left blank.

Jurisdictional Delineation of Project Site



Waters of the US were identified along the entire lengths of all five streams on which Waters of the US were delineated; however, the delineated Waters of the State are wider than the Waters of the US.



5. *Environmental Analysis*

BIOLOGICAL RESOURCES

This page intentionally left blank.

5. Environmental Analysis

5.4 CULTURAL RESOURCES

Cultural resources include places, objects, and settlements that reflect group or individual religious, archaeological, architectural, or paleontological activities. Such resources provide information on scientific progress, environmental adaptations, group ideology, or other human advancements. This section of the Draft Environmental Impact Report (Draft EIR) evaluates the potential for the project to impact cultural resources. Analysis in this section is based on the following technical studies:

- *Alternative Road Alignments, Castaic High School Site, Los Angeles County, CA*, Supplemental Survey, McKenna et al., May 19, 2012.
- *Addendum Studies: A Class III/Section 106 and Phase I CEQA Cultural Resources Investigation for the Proposed William S. Hart Union High School District Castaic High School Project Area in the Romero Canyon Area of Los Angeles County, California*, Addendum Study, McKenna et al., January 16, 2012.
- *A Class III/Section 106 and Phase I CEQA Cultural Resources Investigation for the Proposed William S. Hart Union High School District Castaic High School Access Roads in the Romero and Sloan Canyon Areas of Los Angeles County, California*, McKenna et al., August 14, 2011.
- *Phase I Archaeological Investigation for the Proposed William S. Hart Union High School District Romero Canyon High School Site APN 3247-068-001 and 3247-068-004 (Tentative Tract 47807) Located in the Castaic Area of Los Angeles County, California*, Gwen R. Romani, April 28, 2010.
- *Intensive Phase I Archaeological Survey/Class III Inventory of APN 3247-068-001, -002, -003, and -004 Los Angeles County, California*, W & S Consultants, December 29, 2007.



Because of the sensitive nature of cultural resources, these studies are not included in the Draft EIR. All cultural resource studies are on file at the William S. Hart Union High School District offices.

5.4.1 Environmental Setting

Study Methodology

The cultural resources investigations consisted of the following tasks:

Archaeological Records Check. Three separate archaeological records checks were performed: California State University, Fullerton, Archaeological Information Center in December 2007; South Central Coastal Information Center (SCCIC), also at CSU Fullerton, in April 2010; SCCIC in July 2011.

Native American Consultation. The Native American Heritage Commission and Los Angeles County Native American representatives were contacted concerning the potential for sacred or religious properties within the project site and tribal knowledge about the project area.

Historical Background Research. The following sources were consulted in April 2010 about listed historic properties within a 0.5-mile radius of the project site:

- The National Register of Historic Places (1979–2002 & supplements)
- The California Inventory of Historical Resources (1976 & supplements)

5. Environmental Analysis

CULTURAL RESOURCES

- California Historical Landmarks (1995 & supplemental information)
- California Points of Historical Interest (1992 & supplemental information)

Intensive Archaeological Field Survey. An archaeological field survey of the following locations was conducted:

- Tentative Tract No. 47807 site and surrounding area in December 2007
- Romero Canyon school site in April 2010
- Parcels 2 and 3 and road alignments for Canyon Hill Road, Valley Creek Road, and Romero Canyon Road in January 2012
- Portions of new road alignments for Canyon Hill Road, Mandolin Canyon Road, and a triangular area next to the intersection of Baringer Road and Sloan Canyon Road where several alternative alignments are being considered in May 2012.

Regulatory Background

Federal and State Regulations

National Historic Preservation Act

The National Historic Preservation Act of 1966 authorized the National Register of Historic Places and coordinates public and private efforts to identify, evaluate, and protect the nation's historic and archaeological resources. The National Register includes districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture.

Section 106 (Protection of Historic Properties) of the National Historic Preservation Act of 1966 (NHPA) requires federal agencies to take into account the effects of their undertakings on historic properties. Section 106 Review refers to the federal review process designed to ensure that historic properties are considered during federal project planning and implementation. The Advisory Council on Historic Preservation, an independent federal agency, administers the review process, with assistance from state historic preservation offices.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act of 1979 regulates the protection of archaeological resources and sites which are on federal lands and Indian lands.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA) is a federal law passed in 1990 that provides a process for museums and federal agencies to return certain Native American cultural items, such as human remains, burial objects, sacred objects, or objects of cultural family heritage and lineal descendants and culturally affiliated Indian tribes.

California Public Resources Code

Archaeological, paleontological, and historical sites are protected pursuant to a wide variety of state policies and regulations enumerated under the California Public Resources Code. In addition, cultural

5. Environmental Analysis

CULTURAL RESOURCES

and paleontological resources are recognized as nonrenewable and therefore receive protection under the California Public Resources Code and CEQA.

- California Public Resources Code 5020–5029.5 continued the former Historical Landmarks Advisory Committee as the State Historical Resources Commission. The Commission oversees the administration of the California Register of Historical Resources and is responsible for the designation of State Historical Landmarks and Historical Points of Interest.
- California Public Resources Code 5079–5079.65 defines the functions and duties of the Office of Historic Preservation (OHP). The OHP is responsible for the administration of federally and state mandated historic preservation programs in California and the California Heritage Fund.
- California Public Resources Code 5097.9–5097.991 provides protection to Native American historical and cultural resources, and sacred sites and identifies the powers and duties of the Native American Heritage Commission (NAHC). It also requires notification of discoveries of Native American human remains to descendants and provides for treatment and disposition of human remains and associated grave goods.

Natural Setting

The site and surrounding area are within the western Transverse Ranges geomorphic province and consist of hilly terrain with moderate to steep slopes and adjacent canyons. Access to the site is via Romero Canyon Road (Romani 2010). The Transverse Ranges Geomorphic Province is a set of east-west-trending steep mountain ranges and valleys extending from the Santa Ynez Mountains in Santa Barbara County in the west to the Little San Bernardino Mountains in Riverside County to the east.

Native vegetation includes southern coastal scrub and coastal like oak woodland (Romani 2010). Canyon bottoms are primarily sandy wash (W&S 2007). Geologic units (soil) include recent alluvium deposits, topsoil and colluvium, and bedrock.

Cultural Setting

Background

Prehistory

It is not presently known when prehistoric Native Americans first occupied the project region, known as the Upper Santa Clara Valley region. While some evidence exists to indicate occupation during the Milling Stone Horizon period (8000 to 3800 before present [BP]), such evidence has proven to be unreliable. Consequently, there is considerable doubt that the area was inhabited by humans before 3800 BP (W&S 2007).

However, there is substantial evidence indicating occupation during the Middle Horizon period (3500–1500 BP). During this time period the Upper Santa Clara Valley region was inhabited by an ethnolinguistic group of Native Americans known as the Tataviam. The Tataviam were hunter-gatherers whose diet probably consisted native plants, seeds, and berries as well as small game. Their political, social, and religious culture is believed to have been similar to those of neighboring Native American populations. Characteristics included shamanism (the belief in a direct relationship between an individual and the supernatural world) and an organizational structure based on tribelets (an autonomous land-holding unit controlled by a chief) (W&S 2007).



5. Environmental Analysis

CULTURAL RESOURCES

Although the Tataviam were among the first groups to be contacted by arriving Spanish missionaries, information concerning their way of life is lacking. This is due to the establishment of the mission system in California, which brought about dramatic changes that disrupted traditional hunter-gatherer practices. By 1810 all of the Tataviam had been assimilated into mission San Fernando, fled the area, or had died of disease. Additionally, Tataviam peoples assimilated into the Mission were often absorbed into other tribes by intermarriage (Romani 2010). Thus, although many Tataviam descendants continue to inhabit the area, little is known about traditional Tataviam ways of life. There is currently a Fernandeano Tataviam Band of Mission Indians¹ with tribal offices in the City of San Fernando southeast of the project site.

History

The first Euro-American mention of the Upper Santa Clara Valley region is found in the writings of the 1769 Portola missionary expedition. Subsequent missionary expeditions followed, yet the area remained isolated due to its rugged topography. Large portions of the Upper Santa Clara Valley region became part of Rancho San Francisco, the estancia belonging to Mission San Fernando, in 1804; Rancho San Francisco served as a ranching and perhaps agricultural out-station for Mission San Fernando.

In 1839 Rancho San Francisco was granted by Governor Alvarado to Antonio del Valle. The recorded grant included 46,000 acres of land south of the project site.

In 1859 oil was discovered immediately to the south of Rancho San Francisco. Seven weeks after the sale the first oil well was installed on the property, making the Castaic area the location of the first true oil drilling in the state. Henry Mayo Newhall bought nearly 40,000 acres of the ranch, and used about 7,000 acres for cattle grazing and wheat cultivation. The Newhall Land and Farming Company has continued as the major agricultural/ranching and land development concern in the region to the present time (W&S 2007).

In addition to its ties to early oil exploration in California, the Upper Santa Clara Valley is linked to two other events of historic significance. First, multiple gold discoveries in the region during the mid-1800s led to the establishment of mining activities and link the Upper Santa Clara Valley to California's gold mining history. Second, the region witnessed the collapse of the St. Francis Dam in 1928, which flooded the valley and claimed the lives of 336 persons. St. Francis Dam was in San Francisquito Canyon about 8.3 miles east-northeast of the project site; however, floodwaters from the dam collapse passed through the project site (W&S 2007).

A railroad depot was built in 1887 at Castaic Junction near the present-day junction of I-5 and SR-126 about 4.5 miles southeast of the project site, on a spur between Saugus to the east and Ventura to the west. The first school in Castaic was opened in 1889, and was used until its demolition in 1996. The first post office in Castaic opened in 1894. In 1915 the California Highway Commission completed the Ridge Route—now called the Old Ridge Route—between Castaic and Gorman to the north (CATC 2012a).

Historical Resources

The records search performed at the SCCIC in April of 2010 identified three historical cultural resources in the vicinity of the proposed school site:

- A cabin foundation and dirt access road with associated artifact scatter of metal, glass, and ceramics

¹ "Fernandeano" designates groups of Indians historically associated with Mission San Fernando in the City of San Fernando.

5. Environmental Analysis

CULTURAL RESOURCES

- A probable rock cairn
- Three glass fragments from two bottles

However, none of the aforementioned resources are on the proposed school site. Additionally, W&S Consultants (2007), Romani (2010), and McKenna (2011 and 2012) concluded that there are no significant historical resources on the proposed school site or along any of the proposed roadway alignment alternatives. The records search did not identify any properties within a 0.5-mile radius of the site as listed in any of the previously mentioned historical resources databases (National Register of Historic Places, etc.).

The historic alignments of Romero Canyon Road and Sloan Canyon Road are considered to be historic resources. The associations of the roadways to Albino Romero and Robert Sloan date to 1920; in addition, there is some evidence the general area may have been claimed prior to 1900. The project site is more directly related to the Sloan holdings; the Romero holdings were north of the project site. Neither of the two roadways can be associated with a significant event, significant historic person, or significant architectural design or engineering, nor do they show the potential for buried cultural resources; thus, neither of the two roadways is considered a significant historic resource.

Archaeological Resources

A search of the Sacred Lands File by the Native American Heritage Commission in April 2010 found no known sacred lands in the immediate area of the project site.

A field survey conducted by W&S Consultants in December of 2007 identified one prehistoric archaeological site on the 198-acre school site, but not within the site of the proposed school. The archaeological site contains one feature appearing to be a hearth and a second appearing to be an earth oven. The field survey of the school site conducted by Romani in April of 2010 confirmed this finding. However, the archaeological site would have been directly impacted by development of one of the access roads for the proposed project, if it could have been located.

Archaeological surveys of roadway alignment alternatives by McKenna et al. did not find the archaeological site identified by W&S Consultants in 2007; McKenna verified the location by GPS coordinates. The location was covered with tall grasses and showed evidence of recent burning. No archaeological resources were found in the roadway alignments by the two surveys of the alignments conducted by McKenna et al.

Paleontological Resources

Most of the property is underlain by sandstone and conglomerate bedrock of the Pliocene/Pleistocene Saugus Formation, with areas of thin alluvial material in the canyons (California Environmental 2010). Saugus formation sedimentary rocks have a high potential for the presence of paleontological resources, and fossil specimens have been recovered from Hasley Canyon and Castaic Creek. A fossil locality south of the project site near the mouth of Hasley Canyon produced specimens of fossil alligator lizard and pocket gopher; a second fossil locality south of Hasley Canyon produced fossil horse specimens; and a third locality in Saugus Formation locality east of Castaic yielded fossil specimens of horse and dog (McKenna 2012). Therefore, there is a high probability that paleontological resources are present on the project site (school site and roadway alignments).



5. Environmental Analysis

CULTURAL RESOURCES

5.4.2 Thresholds of Significance

CEQA Guidelines Section 15064.5 provides direction on determining significance of impacts to archaeological and historical resources. Generally, a resource shall be considered “historically significant” if the resource meets the criteria for listing on the California Register of Historical Resources (Public Resources Code Section 5024.1), including the following:

- Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- Is associated the with lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history.

The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, or is not included in a local register of historical resources, does not preclude a lead agency from determining that the resource may be an historical resource.

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

CUL-1	Cause a substantial adverse change in the significance of an historical resource pursuant to Section 15064.5.
CUL-2	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.
CUL-3	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
CUL-4	Disturb any human remains, including those interred outside of formal cemeteries.

The Initial Study, included as Appendix A substantiates that impacts associated with Threshold C-4 would be less than significant. This impact will not be addressed in the following analysis.

5.4.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

In the following impact analysis, “project site” refers to the entire 198-acre, four-parcel site (not all of which would be graded), and the “school site” refers to the 71.4-acre site proposed for development of the high school and the landslide remediation work.

5. Environmental Analysis

CULTURAL RESOURCES

IMPACT 5.4-1: PROJECT DEVELOPMENT WOULD NOT SUBSTANTIALLY CHANGE THE SIGNIFICANCE OF A HISTORICAL RESOURCE. [THRESHOLD CUL-1]

Impact Analysis: There are three historical resources within a 0.5-mile radius of the proposed school site: a cabin foundation with dirt access road, a rock cairn, and a few glass fragments. None of these are listed on the National Register of Historic Places or the California Register of Historical Resource. None of the resources have unique workmanship or materials or association with historically important persons or events and thus do not meet significance criteria under CEQA. Additionally, while the Upper Santa Clara Valley region is associated with three events of historical significance to California (oil mining, gold mining, and collapse of the St. Francis Dam), the school site falls outside the areas of major historical development and use in the region.

No historic resources were found on the school site by either investigation. Romero Canyon Road and Sloan Canyon Road were identified as historic resources, but not significant historic resources, and development of proposed access roads on the historic alignments of these two roadways would not damage historically significant resources.

However, given the over 200-year record of Euro-American habitation in the Upper Santa Clara River Valley, and the presence of three historic resources within 0.5 mile of the project site, there is some possibility that historic resources could be buried in site soils and that such resources may be damaged by site grading and construction activities. Possible destruction of historic resources would be a significant impact. Mitigation measures CUL-1 through CUL-6 would reduce this impact to less than significant.

IMPACT 5.4-2: DEVELOPMENT OF PROJECT ROADWAYS WOULD NOT IMPACT AN ARCHAEOLOGICAL SITE IDENTIFIED IN THE PROJECT SITE. [THRESHOLD CUL-2 (PART)]

Impact Analysis: One prehistoric archaeological site was identified within Parcel 2 of the project site, but outside of the school site. The archaeological site contains what appear to be a hearth and an earth oven. Ground disturbance during site grading and construction of the school would not disturb this resource. The archaeological site was identified by W&S in 2007 as being in the alignment of a proposed access road for the school. The location of the archaeological site was intensively surveyed in 2011 and the site was not found. The location of the site was covered with tall grasses with evidence of recent burning. No other archaeological resources were identified in the roadway alignment alternatives in the two surveys of those alignments conducted in 2011 and 2012. Development of proposed roadways would not impact this previously identified archaeological site.

IMPACT 5.4-3 PROJECT GRADING AND CONSTRUCTION ACTIVITIES COULD DAMAGE PREVIOUSLY UNDISCOVERED BURIED ARCHAEOLOGICAL RESOURCES. [THRESHOLD CUL-2 (PART)]

Impact Analysis: The records searches and field surveys conducted in December 2007, April 2010, and January 2012 did not identify any archaeological resources on the proposed school site. However, considering the archaeological evidence for Native American habitation of the Upper Santa Clara River Valley from at least 3500 BP and the archaeological site found within the project site, there is the potential for more archaeological resources to be unearthed during grading and construction. Possible destruction of archeological resources would be a significant impact. Mitigation measures CUL-1 through CUL-6 would reduce this impact to less than significant.



5. Environmental Analysis

CULTURAL RESOURCES

IMPACT 5.4-4: PROJECT DEVELOPMENT COULD DESTROY UNIQUE PALEONTOLOGICAL RESOURCES. [THRESHOLD CUL-3 (PART)]

Impact Analysis: Grading of the school site would involve a significant amount of earthwork for the school site, landslide areas, and roadways. Saugus Formation conglomerate and sandstone, which underlie much of the site as well as much of the access road alignments, have yielded a number of vertebrate fossil specimens from Hasley Canyon and Castaic Creek. Site grading and excavation could disturb Saugus Formation bedrock and could thus impact paleontological resources anticipated to occur in the onsite bedrock. Possible destruction of paleontological resources would be a significant impact. Mitigation measures CUL-7 through CUL-13 would reduce this impact to less than significant.

IMPACT 5.4-5 PROJECT DEVELOPMENT WOULD NOT DESTROY UNIQUE GEOLOGICAL RESOURCES. [THRESHOLD CUL-3 (PART)]

Impact Analysis: Landforms onsite consist of hills and canyons, which are common in lower-elevation parts of the Transverse Ranges Geomorphic Province and, thus, are not unique geological features. Development of the project would not destroy any unique geological features.

5.4.4 Cumulative Impacts

The project site was not found to contain significant paleontological or historical cultural resources. One prehistoric archaeological site was found within the project site, but not within the proposed school site, by W&S in 2007. That archaeological site was not found by a subsequent survey of that location by McKenna et al. in 2011. However, the research did not fully eliminate the potential for disturbing previously undiscovered resources or remains. The potential for cumulative impacts to cultural resources from other cumulative projects is unknown but likely similar due to their location in the Upper Santa Clara River Valley. Destruction of significant cultural resources from each of these projects would constitute a significant cumulative impact.

However, similar to the proposed project, other projects would require mitigation of impacts, including construction monitoring, testing, archiving, and recovery of any found resources prior to development of the site. The proposed project has incorporated mitigation measures (CUL-1 through CUL-13) that would reduce the potential to contribute to cumulative impacts. Therefore, the project would not result in substantial impacts to cultural resources. In consideration of the preceding factors, the project's contribution to cumulative cultural resource impacts would be rendered less than significant, and therefore project impacts would not be cumulatively considerable.

5.4.5 Existing Regulations and Standard Conditions

Federal

- National Historic Preservation Act
- Archaeological Resources Protection Act
- Native American Graves Protection and Repatriation Act

State

- California Public Resources Code Sections 5020–5029.5, 5079–5079.65, 5097.9–5097.99

5.4.6 Level of Significance Before Mitigation

Upon implementation of existing regulations and standard conditions Impact 5.4-2 and Impact 5.4-5 would be less than significant.

Without mitigation, the following impacts would be **potentially significant**:

- Impact 5.4-1 Historic resources could be buried in site soils and may be disturbed by project ground-disturbing activities.
- Impact 5.4-3 Project ground-disturbing activities could damage previously undiscovered archaeological resources buried in site soils.
- Impact 5.4-4 Project development could destroy unique paleontological resources.

These impact conclusions apply to both project-specific and cumulative impacts.

5.4.7 Mitigation Measures

Impact 5.4-1

CUL-1 Prior to the initiation of project-related earthmoving activities and excavation, the School District school facilities project manager or their designee shall retain a County-certified qualified archaeologist. The qualified archaeologist shall meet the Secretary of the Interior's Professional Qualifications Standards (48 Federal Register 44738–39). The archaeologist must have knowledge of both prehistoric and historical archaeology.

CUL-2 Prior to the initiation of project-related earthmoving activities and excavation, a cultural resource monitoring plan shall be prepared by a qualified archeologist.

- The cultural resource monitoring plan shall outline when and for how long monitoring shall occur, where on the site monitoring of vegetation clearing and earthmoving activities shall be required, methods of monitoring, types of artifacts anticipated, procedures for temporary stop and redirection of work to permit sampling, identification and evaluation of possible resources, procedures for additional analysis, and accommodation and procedures for Native American monitors, if any.

CUL-3 Prior to the start of ground disturbing activities on the project site, the School District school facilities project manager or their designee shall ensure that a qualified archaeologist or another mitigation program staff member has conducted cultural resources sensitivity training for all construction workers involved in moving soil or working near soil disturbance.

- Construction personnel, including heavy-equipment operators, shall be briefed on procedures to be followed in the event that cultural remains are encountered by earthmoving activities, particularly if archaeological construction monitors are not on site.
- Pre-construction training shall include:



5. Environmental Analysis

CULTURAL RESOURCES

- Review the types of archaeological resources that might be found
 - Review of laws and applicable requirements concerning the protection of cultural resources.
 - Prehistoric or historic cultural resource discovery procedures
 - The briefing shall be presented to new contractor personnel as necessary.
 - Names and telephone numbers of the monitor and other mitigation program personnel shall be provided to appropriate construction personnel.
- CUL-4 During project-related earthmoving activities and excavation, the construction manager shall adhere to the stipulations of the cultural resource monitoring plan. The archaeologist shall have the authority to halt any project-related activities adversely impacting potentially significant resources.
- CUL-5 During project-related earthmoving activities and excavation, if cultural resources are uncovered they shall be recovered and analyzed in accordance with CEQA guidelines. A qualified archaeologist shall assess the find(s) and determine if they are of value. If the find(s) are of value then:
- Suspension of ground disturbances within a 30-foot radius of the discovery shall not be lifted until the archaeological monitor has evaluated the find to assess whether they are classified as historical resources or unique archaeological sites, pursuant to CEQA.
 - The construction contractor shall prepare all potential finds in excavated material to the point of identification.
 - Significant archaeological resources found shall be preserved as determined necessary by the archaeologist.
 - Excavated finds shall be curated at either the Los Angeles County Natural History Museum or its designee on a first-refusal basis. After which finds shall be offered to a local museum or repository willing to accept the resource.
 - Within 30 days of completion of the end of earth moving activities, the archeologist shall draft report summarizing the finds, and shall include the inspection period, an analysis of any resources found, and identification of the repository.
 - Any resulting reports shall be filed with the School District or their designee and with the South Central Coastal Information Center at the California State University, Fullerton.

Impact 5.4-3

- CUL-6 Prior to the start of any ground disturbing activities on the project site Native American representatives from the Fernandeño Tataviam Band of Mission Indians (Tribe) shall be

5. Environmental Analysis

CULTURAL RESOURCES

notified of the pending activities. The qualified archaeologist shall coordinate with the Tribal representatives during the drafting of the archaeological monitoring plan. During ground disturbing activities, if there is any evidence of Native American resources (significant or otherwise), action shall be taken in accordance with the archaeological monitoring plan and Mitigation Measures CUL-1 through CUL-5.

Impact 5.4-4

CUL-7 Prior to the initiation of project-related earthmoving activities and excavation, the School District school facilities project manager or their designee shall retain a qualified paleontologist approved by Los Angeles County and the Natural History Museum of Los Angeles County Vertebrate Paleontology Section.

CUL-8 Prior to the initiation of project-related earthmoving activities and excavation, a cultural resource monitoring plan shall be prepared by a qualified paleontologist.

- The cultural resource monitoring plan shall outline when and for how long monitoring shall occur, where on the site and at what depths monitoring of earthmoving activities shall be required, methods of monitoring, types of artifacts anticipated, procedures for temporary stop and redirection of work to permit sampling, identification and evaluation of possible resources, procedures for additional analysis.

CUL-9 Prior to the initiation of project-related earthmoving activities and excavation, the School District school facilities project manager or their designee shall ensure that a qualified paleontologist or other mitigation program staff member has conducted paleontological resources sensitivity training for all construction workers involved in moving soil or working near soil disturbance.

- Construction personnel, including heavy-equipment operators, shall be briefed on procedures to be followed in the event that cultural remains are encountered by earthmoving activities, particularly if paleontological construction monitors are not on site.
- Pre-construction training shall include:
 - Review the types of paleontological resources that might be found
 - Review of laws and applicable requirements concerning the protection of fossil resources.
 - Paleontological resource discovery procedures
- The briefing shall be presented to new contractor personnel as necessary.
- Names and telephone numbers of the monitor and other mitigation program personnel shall be provided to appropriate construction personnel.

CUL-10 During project-related earthmoving activities and excavation, a qualified paleontologist shall monitor ground-disturbing activities in accordance with the cultural resource monitoring plan.



5. Environmental Analysis

CULTURAL RESOURCES

- Monitoring shall consist of visually inspecting debris piles and freshly exposed strata to allow for the discovery and recovery of larger fossil remains, and periodically dry test screening rock, sediment, and debris to inspect smaller fossil remains. As soon as practicable, the monitor shall recover all larger vertebrate fossil remains, a representative sample of invertebrate or plant fossil specimens, or any fossiliferous rock or sediment sample that can be recovered easily. If recovery of a large or unusually productive fossil occurrence is warranted, earthmoving activities shall be diverted temporarily around the fossil site and a recovery crew shall be mobilized as necessary to remove the occurrence as quickly as possible. If not on site when a fossil occurrence is uncovered by such activities, the activities shall be diverted temporarily around the fossil site and the monitor called to the site to evaluate and, if warranted, recover the occurrence. If the paleontologist or monitor determines that the fossil site is too unproductive or the fossil remains not worthy of recovery by the monitor, no further action will be taken to preserve the fossil site or remains, and earthmoving activities shall be allowed to proceed through the site immediately. The location and proper geologic context of any recovered fossil occurrence or rock or sediment sample shall be documented.

CUL-11 During or after project-related earthmoving activities and excavation, all fossil specimens recovered from the area as a result of mitigation, including those from processing rock or sediment samples, will be treated (i.e., prepared, identified, curated, catalogued) in accordance with designated museum repository requirements. Rock or sediment samples shall be submitted to commercial laboratories for microfossil, pollen, radiometric dating, or other analysis, as appropriate.

CUL-12 During project-related earthmoving activities and excavation, the monitor shall maintain daily monitoring logs that include the particular tasks accomplished, the earthmoving activity monitored, the location where monitoring was conducted, the rock unit(s) encountered, the fossil specimens recovered, and associated specimen data and corresponding geologic and geographic site data.

CUL-13 Within 30 days of completion of the end of earth moving activities, a final technical report of results and findings shall be prepared by the paleontologist in accordance with any County requirement and the cultural resource monitoring plan.

- Any resulting reports shall be filed with the School District or their designee and the museum repository.

5.4.8 Level of Significance After Mitigation

The mitigation measures identified above would reduce potential impacts associated with cultural resources to a level that is less than significant. Therefore, no significant unavoidable adverse impacts relating to cultural resources have been identified. These impact conclusions apply to both project-specific and cumulative impacts.

5. Environmental Analysis

5.5 GEOLOGY AND SOILS

This section evaluates the potential for implementation of the Castaic High School to impact geological and soil resources. The analysis in this section is based in part on the following technical reports which are included in Appendix F:

- *Geologic Hazards and Soils Investigation Report, Castaic Area High School Site, Romero Canyon Area, County of Los Angeles*, Geolabs Westlake Village, November 2010.
- *Geotechnical Desktop Study New Castaic High School Romero Canyon Site, Tentative Tract 47807 Castaic Area, Los Angeles County, California*, Fugro West, May 2010.

The Fugro West study covered the entire 198-acre project site and the Geolabs study covered only parcels 1 and 4 (see Figure 3-3).

The purpose of the studies was to evaluate the existing subsurface conditions at the site as they relate to the proposed project and provide geotechnical design parameters for the planned construction. The scope of the investigations included:

- Research and review of available published literature addressing the general area.
- Geologic mapping and field reconnaissance.
- Subsurface exploration and sampling, which included 25 exploratory pits and 16 exploratory borings.
- Laboratory testing to evaluate the engineering characteristics of typical onsite earth materials.
- Analyses of the data developed during the field exploration and laboratory testing program.
- Preparation of geotechnical and geologic maps.



The proposed school would be designed and constructed in strict accordance with the recommendations contained in the geotechnical investigation. Minor revisions to earthwork and construction may occur based on field conditions observed by the geotechnical engineer during grading.

All figures are located at the end of this section.

5.5.1 Environmental Setting

Regulatory Background

California Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was signed into state law in 1972 (California Public Resources Code Sections 2621 et seq.) to mitigate the hazard of fault rupture by prohibiting the location of structures for human occupancy across the tract of an active fault. The act requires the State Geologist to delineate earthquake fault zones along faults that are “sufficiently active” and “well defined.” According to the State Geologist, an active fault is one that has had surface displacement within the Holocene Epoch (roughly the last 11,000 years). A potentially active fault is defined as any fault that has had surface displacement during Quaternary time (last 1,600,000 years) but not within the Holocene. An inactive fault is one that has been proven not to have moved in 1,600,000 years. The act also requires that cities and counties withhold development permits for sites within an earthquake fault zone until geologic investigations demonstrate that the sites are not threatened by surface displacements from future faulting. Pursuant to this act, structures for human occupancy are not allowed within 50 feet of the trace of an active fault.

5. Environmental Analysis

GEOLOGY AND SOILS

Seismic Hazard Mapping Act

The Seismic Hazard Mapping Act (California Public Resources Code Section 2695) was adopted by the state in 1990 to protect public safety from the effects of earthquake hazards apart from surface fault rupture, including strong ground shaking, liquefaction, seismically induced landslides, or other ground failure caused by earthquakes. The goal of the act is to minimize loss of life and property by identifying and mitigating seismic hazards. The California Geological Survey (CGS) prepares and provides local governments with seismic hazard zone maps that identify areas susceptible to amplified shaking, liquefaction, earthquake-induced landslides, and other ground failures. The seismic hazard zones delineated by the CGS are called “zones of required investigation” because site-specific geological investigations are required for construction projects within these areas.

California Building Code

Current law states that every local agency enforcing building regulations, such as cities and counties, must adopt the provisions of the California Building Code (CBC) within 180 days of its publication. The publication date of the CBC is established by the California Building Standards Commission and the code is also known as Title 24, Part 2 of the California Code of Regulations. The most recent building standard adopted by the legislature and used throughout the state is the 2010 version of the CBC, often with local, more restrictive amendments that are based on local geographic, topographic, or climatic conditions. These codes provide minimum standards to protect property and public safety by regulating the design and construction of excavations, foundations, building frames, retaining walls, and other building elements to mitigate the effects of seismic shaking and adverse soil conditions. The CBC contains provisions for earthquake safety based on factors including occupancy type, the types of soil and rock onsite, and the strength of ground.

Natural Hazards Disclosure Act

The Natural Hazards Disclosure Act (California Civil Code Sections 1103 et seq.; California Public Resources Code Section 2694) requires that sellers of real property and their agents provide prospective buyers with a “Natural Hazard Disclosure Statement” when the property being sold lies within one or more state-mapped hazard areas, including a Seismic Hazard Zone.

General Permit for Storm Water Discharges Associated with Construction

The State Water Resources Control Board Order No. 2009-0009-DWQ (General Construction Permit) contains water quality standards and stormwater discharge requirements applying to construction projects of one acre or more in area. The General Construction Permit was issued pursuant to National Pollutant Discharge Elimination System regulations for implementing part of the federal Clean Water Act. Construction projects of one acre or more are required to prepare and implement a Stormwater Pollution Prevention Plan specifying best management practices with the goal of reducing or eliminating soil erosion from construction sites.

Geologic Setting

Regional Geologic Setting

The site is in the eastern Ventura Basin of the Transverse Ranges Geomorphic Province of Southern California. The Transverse Ranges Geomorphic Province extends approximately 320 miles east of Point Arguello and San Miguel Island to the mountains of Joshua Tree National Park and is characterized by predominantly east–west–trending elongated mountain ranges composed of sedimentary and volcanic rocks

5. Environmental Analysis

GEOLOGY AND SOILS

ranging in age from Cretaceous to Recent.¹ Major east-trending folds and faults reflect regional north-south compressional forces from the San Andreas fault. The area is mapped as Plio-Pleistocene-age nonmarine sedimentary deposits of the Saugus Formation (GeoLabs 2010).

Local Geologic Setting

The project site has both gentle hills and rugged steep slopes surrounding canyons. Ridgelines that run north to south are located along the western and central portions of the site. West-facing slopes tend to be steeper than the east-facing slopes. The elevation difference across the property is about 650 feet, ranging from about 1,730 feet above mean sea level (amsl) near the south-central portion to 2,380 feet amsl in the northwestern corner. Two canyons extend north-south through the property: Romero Canyon and an unnamed side canyon that intersects Romero Canyon from the west. Two other north-south canyons are outside the school site: an unnamed canyon adjacent to the west site boundary and Sloan Canyon to the east.

Geologic Units Onsite

Subsurface explorations performed during the geotechnical investigation identified alluvial deposits, colluvium, landslide deposits, Saugus Formation, and the Pico Formation geologic units, as described below.

Alluvium (Qal). Quaternary alluvium was encountered in low-lying areas throughout the site, most notably in the primary north-to-south draining canyons that converge in the southeastern corner of the site, where the alluvium is up to 70 feet deep. The alluvium consists of silty sand to gravelly sand in a medium dense to very dense and moist condition with infrequent silt interlayers. Alluvial deposits in the western canyon are slightly more coarse grained than in the eastern canyon. However, both canyons exhibited a range of materials from silt to gravel.

Colluvium. Colluvium (sediment that has slid to the base of a slope) was found throughout the project site on some of the gentler slopes and in draws near the base of steep-sided ridges; it was typically three to eight feet thick. In some locations colluvium deposits were up to 14 feet thick in larger draws. The colluvium deposits were composed primarily of sandy clay with gravel to silty sand with gravel in a loose to medium dense and dry condition. Rootlets and pores were common in colluvium.

Landslide Deposits. Within the project area, 12 landslides have been identified. The geologic hazards report indicates that both translational and rotational failures were observed.² Translational failures along clay-rich layers are located in the upper portion of the stratigraphic section. Rotational failures were identified in areas where the bases of steep slopes had been undercut. The landslide deposits ranged from relatively intact materials similar to bedrock to highly fractured, broken, and weathered materials. Landslides are discussed in detailed below.

Saugus Formation. Bedrock of the Saugus Formation was identified in the hillside areas of the project site underlying at depth the alluvial deposits and landslide debris. The bedrock materials in the eastern portion of the project site consist of fine- to coarse-grained sandstone and conglomerate that is described as friable,³ with varying amounts of gravel, cobbles, and boulders. The bedrock materials in the western portion

¹ The Cretaceous Period extends from 146 to 65 million years ago; the Recent, or Holocene, Epoch extends from approximately 11,500 years ago to the present.

² In translational landslides the rupture surface is roughly planar; in rotational landslides the rupture surface is curved and concave upward.

³ Friable material is easily crumbled or pulverized.



5. Environmental Analysis

GEOLOGY AND SOILS

of the site contain a higher percentage of claystone and clayey siltstone layers, which were identified as having contributed to landslides.

Pico Formation sandstone, tan, somewhat easy to crumble, and locally pebbly, underlies the Saugus Formation. Pico formation rock is prone to large landslides, earthflows,⁴ and soil slips; and is the source of large failures in overlying Saugus Formation rock where the Saugus Formation is less than 100 feet thick and consists of sloping rock layers. The differentiation between the two formations was based upon the blue gray color of the Pico Formation. Pico Formation rock is similar to Saugus Formation rock in engineering properties such as shear strength.

Geologic Structure

The geologic structure in the vicinity of the project site is dominated by the southeasterly plunging Loma Verde Anticline and Townsend Syncline.⁵ The Loma Verde Anticline crosses the site near the northwest corner of the site to approximately the southeast corner. The Townsend Syncline runs in a northwest to southeast direction just north of the northeast corner of the project site. The anticline and syncline are shown in Figure 5.5-1, *Geologic Map*.

Minor faults were observed in some exploratory excavations by Geolabs (2010). The faults were reported to be typical of deformation about the axis of an anticline as the bedrock is stretched during bending.

Landslides

The entire project site is mapped in a zone of required investigation for hazards from earthquake-induced landslides by the California Geological Survey (CGS 2002; CGS 2003). Twelve landslides were identified within the project site (Geolabs 2010). The landslides were grouped into four complexes, as listed below in Table 5.5-1. Areas of landslide deposits and potential landslide deposits onsite are shown on Figure 5.5-1, *Geologic Map*.

A landslide area in the northwest portion of the project site, in landslide complex Qls1, appears to contain relatively extensive deep-seated features that were documented to be in excess of 100 feet thick and was speculated to extend to depths of greater than 150 feet. Other mapped or potential landslides in Qls4 may be 100 feet or more thick. There is no information on subsurface conditions in some landslides onsite (Geolabs 2010).

Table 5.5-1
Landslides on the Project Site

<i>Landslide Complex</i>	<i>Location</i>	<i>Landslides</i>
Qls1	North part of site	Qls1, Qls6, Qls7, Qls8, Qls9, Qls10, Qls11
Qls2	North part of site, south of Qls1	Qls2, Qls5
Qls3	Southern part of site, extends south offsite	Qls3, Qls13
Qls4	East-central part of site	Qls14
Fugro (2010)		

⁴ An earthflow is a landslide of saturated soil and sediment.

⁵ An anticline is an arch-shaped fold of rock layers; a syncline is a through-shaped fold.

5. Environmental Analysis

GEOLOGY AND SOILS

Groundwater

Groundwater was not encountered in the geotechnical investigation. The deepest boring was to 130 feet. Historic high groundwater depths are about 10 feet below ground surface (bgs) in alluvial canyons near the site, based on historic groundwater depths in the Santa Clara River Valley, on alluvial fans along the sides of the valley, and in canyons near the valley. Shallow groundwater (10 feet bgs) in canyons is due to heavy runoff and to shallow groundwater derived from surrounding highlands.

Seismic Hazards

Regional Faults

The area surrounding the project site, like most of Southern California, is located in a region of high seismic activity and, therefore, is subject to potentially destructive earthquakes. There are a number of faults in the region that are considered active and have the potential to impact the site in the form of seismic shaking, should they be the source of an earthquake. These include, but are not limited to, the San Gabriel Fault, Holser Fault, Santa Susana Fault, Northridge (E. Oak Ridge), San Cayetano Fault, Simi-Santa Rosa, and the San Fernando Fault Zone. The locations of major faults in the project region are shown in Figure 5.5-2, *Regional Fault Map*.

The faults in Southern California include active, potentially active and inactive faults, which have been designated by the California Division of Mines and Geology (CDMG) based on criteria developed for the Alquist-Priolo Earthquake Fault Zoning Program. By definition, an active fault is one that has had surface displacement within Holocene time (approximately the past 11,000 years). A potentially active fault is a fault that has demonstrated surface displacement of Quaternary age deposits (past 1.6 million years). Inactive faults are those faults that have not moved in the past 1.6 million years.

Table 5.5-2 below lists the major faults and fault zones in the project region and the approximate distance from the site to each fault or fault zone. All of the faults listed in Table 5.5-2 are either active or potentially active.



Table 5.5-2	
Regional Fault Systems	
Fault System Name	Distance from Project Site (Miles)
San Gabriel	1.6
Holser	2.7
Santa Susana	4.3
Northridge (East Oak Ridge)	6.3
San Cayetano	7.0
Oak Ridge (onshore)	6.0
Simi – Santa Rosa	8.6
Sierra Madre (San Fernando)	11.1
Santa Ynez East	14.8
San Andreas - Whole	16.6
Verdugo	20.0
Anacapa – Dume	24.2
Sierra Madre	25.6
Source: Fugro 2010.	

5. Environmental Analysis

GEOLOGY AND SOILS

Faults near the Project Site

No active or potentially active faults cross the project site. Two unnamed fault strands, considered potentially active, pass about one mile south of the project site. The Santa Felicia Fault, also considered potentially active, is approximately one mile north of the site. There are no Alquist-Priolo Earthquake Fault Zones in or next to the project site; the nearest such zone to the site is about 4.5 miles to the east and runs along the San Gabriel Fault (CDMG 2000).

Ground Shaking

Violent shaking occurs not only next to the earthquake's epicenter, but for many miles in all directions. The peak ground acceleration estimated to occur onsite during an earthquake with a 2 percent chance of exceedance in 50 years, that is, an average return period of 2,475 years, is 0.69g where g is the acceleration of gravity. Seismic parameters for use in project design are provided in both the Geolabs and Fugro reports (2010). The Modified Mercalli Intensity (MMI) Scale is a qualitative scale of how earthquakes are felt by people and how they affect buildings. It is a 12-point scale ranging from Intensity I, which is rarely felt by people, to Intensity XII, in which damage to structures is total and objects are thrown into the air. An acceleration of 0.69g corresponds roughly to an intensity of IX on the MMI Scale (Wald 1999): Damage is considerable in specially designed structures, and well-designed frame structures are thrown out of plumb. Damage is great in substantial buildings, with partial collapse, and buildings are shifted off foundations (USGS 2009).

Several earthquakes in the region within the last 200 years are estimated to have caused Intensity VIII ground shaking on the site. In an Intensity VIII earthquake damage is slight in specially designed structures; ordinary substantial buildings are damaged considerably and partially collapse; and damage is great in poorly built structures. Historic earthquakes in the region estimated to have caused ground shaking of that intensity on the site include:

- 1852 earthquake, 24 miles from site
- Tehachapi Earthquake, 1952, 40 miles from site
- Sylmar Earthquake, 1971, 16 miles from site
- Northridge Earthquake, 1994, 13 miles from site

Liquefaction and Related Ground Failure

Liquefaction is a process where strong earth shaking causes sediment layers that are saturated with groundwater to lose strength and behave as a fluid. This subsurface process can lead to near-surface or surface ground failure that can result in property damage and structural failure. If surface ground failure does occur, it is usually expressed as lateral spreading, flow failures, ground oscillation, and/or general loss of bearing strength. Sand boils (injections of fluidized sediment) can commonly accompany these different types of failure. Loose granular soils and silts that are saturated by relatively shallow groundwater are susceptible to liquefaction.

Groundwater at the site was not encountered in the geotechnical investigations. However, the southern portion of the site is underlain by alluvial sediments within an intermittent drainage course; shallow groundwater commonly occurs in such settings. The project site is mapped in a liquefaction hazard zone.

An evaluation of liquefaction potential onsite assessed two groundwater conditions: current conditions with no groundwater, and shallow groundwater at a depth of 10 feet below the current ground surface. Liquefaction is unlikely under current groundwater conditions due to the absence of groundwater in the

5. Environmental Analysis

GEOLOGY AND SOILS

upper 50 feet of soil. If shallow groundwater is present onsite, liquefaction is predicted in thin layers of alluvium with low relative density (Geolabs 2010).

At the project site the planned grading will raise the ground surface several tens of feet in the areas of the alluvial deposits. Based on the anticipated grade changes, surface effects of liquefaction are considered unlikely (Geolabs 2010).

Lateral Spreading

Lateral spreading is the downslope movement of surface sediment due to liquefaction in a subsurface layer. Such movement can occur on slope gradients of as little as one degree. Lateral spreading typically damages pipelines, utilities, bridges, and structures. The potential for lateral spreading onsite is considered remote, as the alluvial materials with a potential to liquefy are either too deep or too dense to be considered candidates for lateral spreading (Geolabs 2010).

Seismic Settlement

Significant seismic settlement, that is, greater than two inches, is considered possible at two locations onsite. Both locations are on or near the site boundaries: one on the south site boundary in the southeast part of the site, and the other near the east site boundary in the northeast portion of the site (Geolabs 2010).

Other Geologic Hazards

Expansive Soils

Expansive soils shrink or swell as the moisture content decreases or increases; the shrinking or swelling can shift, crack, or break structures built on such soils. Tests of expansion index were conducted on samples from eight borings from parcels 1 and 4 onsite. Soil from one boring had an expansion index of 66; indices from soil samples from the remaining borings ranged from zero to seven (Geolabs 2010). Expansion indices between zero and 20 indicate very low expansion potential, while expansion indices between 51 and 90 indicate medium expansion potential (ASTM 2011).

Hydrocollapse

Hydrocollapse, a condition where dry or moist soils undergo settlement upon being wetted, was evaluated for the project site using samples collected from site borings. The upper 10 to 20 feet of alluvium in the canyons in the Santa Clarita Valley area are susceptible to hydrocollapse (Geolabs 2010).

Corrosive Soils

Site soils have negligible potential for corrosion of concrete, based on tests of samples of subsurface site soils from parcels 1 and 4 onsite (Geolabs 2010).

5.5.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

- GEO-1 Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:



5. Environmental Analysis

GEOLOGY AND SOILS

- i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.
- ii) A active earthquake fault or fault trace, or is the site located within the boundaries of any special studies zone or within an area designated as geologically hazardous in the safety element of the local general plan.
- iii) The construction, reconstruction, or relocation of any school building on the trace of a geological fault along which surface rupture can reasonably be expected to occur within the life of the school building.
- iv) Strong seismic ground shaking.
- v) The construction, reconstruction, or relocation of any school building on a site subject to moderate-to-high liquefaction.
- vi) The construction, reconstruction, or relocation of any school building on a site subject to landslides.

GEO-2 Result in substantial soil erosion or the loss of topsoil.

GEO-3 Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

GEO-4 Be located on expansive soil, as defined in Table 18-1B of the Uniform building Code (1994), creating substantial risks to life or property.

GEO-5 Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

The initial study, included as Appendix A, substantiates that impacts related to threshold GEO-5 would be less than significant. These impacts are not discussed in this section.

5.5.3 Environmental Impacts

This section examines the possible impacts to and from existing soils and geological conditions on the project site, the area of proposed related offsite improvements, and in the project vicinity. Subjects discussed include exposure of future occupants to seismic ground shaking and its secondary effects and to fault-induced ground rupture. Also evaluated is the potential for other geotechnical conditions, including settlement, slope stability, expansive soils, subsidence, and soil erosion potential.

Estimated grading quantities total about 6.3 million cubic yards cut and fill each including grading of the school site, landslide removals, and grading for onsite and offsite roadways; project grading is described further in Section 4.6.

The following impact analysis addresses thresholds of significance for potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

5. Environmental Analysis

GEOLOGY AND SOILS

IMPACT 5.5-1: PROJECT SITE IS NOT NEAR KNOWN ACTIVE FAULTS. [THRESHOLDS GEO-1.i, GEO-1.ii AND GEO-1.iii]

Impact Analysis: There are no active faults within or next to the project site. Two known potentially active faults are within one mile of the site: the Santa Felicia Fault, approximately one mile north of the site; and two branches of an unnamed fault, both about one mile south of the site. There is an active part of the San Gabriel Fault approximately 4.5 miles southeast of the site; the nearest Alquist-Priolo Earthquake Fault Zone to the project site is along that part of the San Gabriel Fault. Project development would not cause hazards related to known active faults in or next to the project site. No Alquist-Priolo Earthquake Fault Zone impacts would occur.

IMPACT 5.5-2 PROJECT WOULD NOT EXPOSE PEOPLE OR STRUCTURES TO STRONG GROUND SHAKING [THRESHOLD GEO-1.iv]

Impact Analysis: The peak earthquake ground acceleration estimated to occur onsite with a 2 percent chance in 50 years, that is, an average return period of 2,475 years, is 0.69g where g is the acceleration of gravity. An acceleration of 0.69g corresponds roughly to an intensity of IX on the MMI Scale (Wald 1999). In an Intensity IX earthquake damage is considerable in specially designed structures, and well-designed frame structures are damaged. Damage would be significant in large buildings, including partial collapse and buildings shifted off foundations (USGS 2009).

Seismic parameters for use in project design, as required by the California Building Code, are provided in the Geolabs study (2010). Compliance with seismic safety standards of the Division of the State Architect (DSA), California Department of Education (CDE), and CBC (California Code of Regulations Title 24 Part 2) would reduce hazards from ground shaking to less than significant.

IMPACT 5.5-3: PROJECT WOULD INVOLVE CONSTRUCTION OF SCHOOL BUILDINGS ON A SITE SUBJECT TO LIQUEFACTION AND LATERAL SPREADING. [THRESHOLDS GEO-1.v, GEO-3 (PART)]

Impact Analysis:

Liquefaction

Liquefaction is unlikely under current groundwater conditions due to the absence of groundwater in the upper 50 feet of soil. Two alluvial canyons are onsite: Romero Canyon, which pass through the central and west parts of the site; and East Canyon, a tributary of Romero Canyon, which passes through the eastern part of the site. The only structures for human use that would be built over alluvial canyons are the stadium bleachers. The stadium would be on the west and east slopes of Romero Canyon. At project completion the ground surface at the proposed stadium would be about 1,872 feet amsl. The existing elevation of the stadium site ranges from about 1,840 feet at the southwest corner of the football stadium site, descending to about 1,800 feet in the east half of the stadium site, and 1,820 feet at the northeast corner. Thus, the stadium would be about 70 feet above the existing elevation of Romero Canyon. Site grading would include removal of 10 to 20 feet of alluvium and fill with engineered soil in accordance with recommendations in the geotechnical study (Geolabs 2010). Thus, the final grade elevation of the stadium would be 80 to 90 feet above the ground surface in Romero Canyon. Based on the anticipated grade changes, surface effects of liquefaction are considered unlikely (Geolabs 2010). Liquefaction impacts would be less than significant.



5. Environmental Analysis

GEOLOGY AND SOILS

Lateral Spreading

The potential for lateral spreading on and next to the building areas is considered remote, because alluvial soils with a potential to liquefy are either too deep or too dense to be considered candidates for lateral spreading (Geolabs 2010). Alluvial soils in the bottom of Romero Canyon in the southern part of the project site could liquefy, and thus lateral spreading could occur in this area. Planned improvements in the affected part of the project site include two evaporation basins and an engineered swale. Project development would not place persons or structures on the affected portion of the site and thus would not expose them to substantial hazards from lateral spreading.

Seismic Settlement

Significant seismic settlement of greater than two inches is considered possible at two locations onsite. Both locations are on or near the site boundaries: one on the south site boundary in the southeast part of the site and the other near the east site boundary in the northeast portion of the site (Geolabs 2010). Neither of the two locations is within the proposed school building pad area; however, both locations are within proposed graded slopes abutting the building pads. Therefore, seismic settlement may adversely affect the school buildings. Seismic settlement is considered a significant impact. Mitigation measures GEO-1 through GEO-4 would reduce this impact to less than significant.

IMPACT 5.5-4: THE PROJECT WOULD INVOLVE THE CONSTRUCTION OF SCHOOL BUILDINGS ON A SITE SUBJECT TO LANDSLIDES. [THRESHOLDS GEO-1.VI AND GEO-3 (PART)]

Impact Analysis: Fifteen landslides were identified within the project site; ground shaking is thought likely to have contributed to causing most of these (Geolabs 2010; Fugro West 2010). The landslides were grouped into four complexes as listed above in Table 5.5-1. Areas of landslide deposits and potential landslide deposits onsite are shown on Figure 5.5-1, *Geologic Map*.

A landslide area in the northwest portion of the project site, in landslide complex Qls₁, appears to contain relatively extensive deep-seated features that were documented to be in excess of 100 feet thick, and it was speculated to extend to depths of greater than 150 feet. Other mapped or potential landslides in Qls₄ may be 100 feet or more thick. There is no information on subsurface conditions in some onsite landslides.

All landslide debris would be removed as part of the project except for portions of landslides Qls₁ and Qls₂, in accord with recommendations in the geotechnical study (Geolabs 2010). Landslide Qls₁ is in the north-central part of the project site and Qls₂ is in the central part of the site. Landslides Qls₁ and Qls₂ would be removed to depths of 15 feet below the existing grade. The project grading plan includes cut grading below the central and upper, or western, part of landslide Qls₁, while the lower (eastern) part of that landslide would be buried by planned fill grading. The grading plan includes removal of a small portion of the upper part of landslide Qls₂ during cut grading, and burial of the lower part of the landslide by fill grading.

Because of the amount of previous landslide activity on the project site, landslides are considered a significant impact. Mitigation measure GEO-1, GEO-2, and GEO-5 would reduce this impact to less than significant.

5. Environmental Analysis

GEOLOGY AND SOILS

IMPACT 5.5-5: PROJECT WOULD NOT RESULT IN SUBSTANTIAL SOIL EROSION. [THRESHOLD GEO-2]

Impact Analysis: Erosion is the movement of soil and rock from place to place. Erosion occurs naturally by agents such as wind and flowing water; however, grading and construction activities can greatly increase erosion if effective erosion control measures are not used.

Site grading would include about 4.89 million cubic yards (mcy) of cut and 4.89 mcy of fill. Grading for project access roads would involve an additional 1.63 mcy of cut and 348,000 cy of fill. Project grading and construction activities would temporarily expose large amounts of soil and could thus result in substantial erosion.

The State Water Resources Control Board Order No. 2009-0009-DWQ (General Construction Permit) contains water quality standards and storm water discharge requirements applying to construction projects of one acre or more in area. The General Construction Permit was issued pursuant to National Pollutant Discharge Elimination System regulations for implementing part of the federal Clean Water Act. Construction projects of one acre or more are required to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) specifying best management practices (BMPs) with the aims of reducing or eliminating soil erosion from construction sites. Common means of soil erosion from construction sites include water, wind, and being tracked offsite by vehicles. Within unincorporated Los Angeles County, compliance with BMPs is administered by the Los Angeles County Department of Public Works.

Categories of BMPs that are included in SWPPPs include:

- Erosion controls: cover and/or bind soil surface to prevent soil particles from being detached and transported by water or wind. Erosion control BMPs include mulch, soil binders, and mats.
- Sediment controls: Filter out soil particles that have been detached and transported in water. Sediment control BMPs include barriers and cleaning measures such as street sweeping.
- Wind erosion control: the aims and methods of wind erosion control are similar to those of erosion control described above.
- Tracking controls: Tracking control BMPs minimize the tracking of soil offsite by vehicles; for instance, stabilizing construction roadways and entrances/exits.
- Non-stormwater management: Prohibit discharge of materials other than stormwater, such as discharges from the cleaning, maintenance, and fueling of vehicles and equipment. Non-stormwater management BMPs also prescribe conducting various construction operations, including paving, grinding, and concrete curing and finishing, in ways that minimize non-stormwater discharges and contamination of any such discharges.
- Waste and materials management: management of materials and wastes to avoid contamination of stormwater. Waste and materials management BMPs include spill prevention and control, stockpile management, and management of solid wastes and hazardous wastes.



5. Environmental Analysis

GEOLOGY AND SOILS

IMPACT 5.5-6 PROJECT MAY RESULT IN SUBSTANTIAL HAZARDS FROM SOIL SUBSIDENCE, COLLAPSIBLE SOILS, OR CORROSIVE SOILS. [THRESHOLD GEO-3 (PART)].

Impact Analysis:

Soil Subsidence and Settlement

The project site would require significant grading, excavation of hillsides, and filling of canyons. Following removal of sediment and rock, engineered soil would be used for fill to depths of nearly 160 feet in some places. This amount of fill material would be susceptible to subsidence and settlement. Because of the depth and amount of fill material required to level the site and roadways, subsidence and settlement are considered a significant impact. Mitigation measures GEO-1, GEO-2, and GEO-6 would reduce this impact to less than significant.

Hydrocollapse

The upper 10 to 20 feet of alluvium in the canyons in the Santa Clarita Valley area are susceptible to hydrocollapse based on qualitative evaluation of onsite borings. Hydrocollapse is considered a significant impact. Mitigation measures GEO-1, GEO-2, and GEO-7 would reduce this impact to less than significant.

Corrosive Soils

Soils from parcels 1 and 4 (see Figure 3-3) are considered to have negligible potential for corrosion of concrete (Geolabs 2010) based on soils sampling and testing from. Additional soil sampling and testing from parcels 2 and 3 are required. Therefore, corrosive soils are considered a significant impact. Mitigation measures GEO-1, GEO-2, and GEO-6 would reduce this impact to less than significant.

IMPACT 5.5-7 PROJECT MAY RESULT IN SUBSTANTIAL HAZARDS FROM EXPANSIVE SOILS. [THRESHOLD GEO-4].

Impact Analysis: Some proposed building areas in parcels 1 and 4 are expected to contain expansive soils. The project would use shallow-continuous or pad-spread footings in accordance with recommendations in the Geolabs report for reducing hazards from expansive soils based on soils sampling and testing. Additional soil sampling and testing from Parcels 2 and 3 are required. Therefore expansive soils are considered a significant impact.

Mitigation measures GEO-1, GEO-2, and GEO-8 would reduce this impact to less than significant.

5.5.4 Cumulative Impacts

Impacts to geology and soils are specific to a specific project site. Mitigation of geologic, seismic, and soil impacts from development projects would also be specific to each site. Compliance with modern building standards, such as the CBC, as well as recommendations in geotechnical reports for each project, serve to reduce seismic-related risks. In consideration of the preceding factors, the project's contribution to cumulative geology and soil impacts would be rendered less than significant, and therefore project impacts would not be cumulatively considerable.

5. Environmental Analysis

GEOLOGY AND SOILS

5.5.5 Existing Regulations and Standard Conditions

State

- California Building Code (Title 24, California Code of Regulations, Part 2)
- General Permit for Storm Water Discharges Associated with Construction
- Seismic Hazards Mapping Act (California Public Resources Code Sections 2690 et seq.)

5.5.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and recommendations in the project geotechnical investigation report, the following impacts would be less than significant: 5.5-1, 5.5-2, 5.5-3 (liquefaction and lateral spreading) and 5.5-5.

Without mitigation, the following impacts would be **potentially significant**:

- **Impact 5.5-3:** Portions of the project site are considered susceptible to seismic settlement.
- **Impact 5.5-4:** The project would involve the construction of school buildings on a site subject to landslides.
- **Impact 5.5-6:** The project could result in hazards from hydrocollapse or corrosive soils.
- **Impact 5.5-7:** The project may result in hazards from expansive soils.



5.5.7 Mitigation Measures

Mitigation measures GEO-1 and GEO-2 apply to all four identified significant impacts.

- GEO-1 All earthwork and project design shall be performed in compliance with building and safety standards of the District, the California Department of Education, Division of the State Architect, and the state building code.
- GEO-2 Prior to start of any earthwork, the District's project geotechnical engineer or engineering geologist shall document all test findings and engineering conclusions in a signed and date-stamped report.

Impact 5.5-3 (Seismic Settlement):

- GEO-3 Prior to start of any earthwork, the District's project engineer or engineering geologist shall test soil density using a standard penetration test or other method approved by the project geotechnical engineer or engineering geologist, at the site of boring RSA 122 in the northeastern part of the project site. The project geotechnical engineer or engineering geologist shall provide recommendations for minimizing hazards related to seismic settlement near the site of boring 122. Compliance with all recommendations of the project geotechnical engineer or engineering geologist is required.
- GEO-4 Prior to start of any earthwork, the District's grading contractor shall remove existing soils to a depth of 20 feet over and around the site of boring GWV16 in the south part of the project site. The radius of soil removal shall be determined by the project geotechnical engineer or

5. Environmental Analysis

GEOLOGY AND SOILS

engineering geologist. The removal bottom – that is, soil remaining after soil removal – near boring GWV16 shall be thoroughly inspected by the geotechnical engineer or engineering geologist before placement of fill soil begins.

Impact 5.5-4 (Landslides)

GEO-5 Prior to start of any earthwork, the District's project geotechnical engineer or engineering geologist shall conduct subsurface soil testing in landslide areas in parcels 2 and 3 of the project site. The geotechnical engineer or engineering geologist shall document site-specific performance standards for landslide removals, remedial grading, and landslide burials to stabilize and remove landslides. The geotechnical engineer or engineering geologist shall document that the soils will support the improvements planned. In the event that soils in landslide areas in Parcels 2 and 3 cannot be remediated to adequately support planned improvements in those areas, the geotechnical engineer or engineering geologist shall recommend areas where the building of structures or other improvements should be avoided.

Impact 5.5-6 (Soil Subsidence and Settlement)

GEO-6 The District's project geotechnical engineer or engineering geologist shall ensure relative compaction of at least 93 percent for fills over 40 feet deep. Lower portions of fills shall be constructed using granular materials to reduce settlement of the fill. Fills over 50 feet deep shall be monitored using methods specified in the geotechnical investigation. The monitoring shall be conducted during excavation and placement of fill, and for a year after placement of engineered fills.

Impact 5.5-6 (Hydrocollapse and Corrosivity)

GEO-7 Prior to start of any earthwork, the District's project geotechnical engineer or engineering geologist shall conduct additional subsurface soil sampling in parcels 2 and 3 of the project site to document susceptibility of soils to hydrocollapse, and shall conduct resistivity, pH, sulfate, and chloride tests to determine the potential of the soils to corrode concrete. The geotechnical engineer or engineering geologist shall document site-specific performance standards for removal of existing alluvium to reduce hazards from hydrocollapse and corrosivity. The geotechnical engineer or engineering geologist shall document that the soils will support the improvements planned after removal of existing alluvium, and placement of engineered fill soils, to the specified standards.

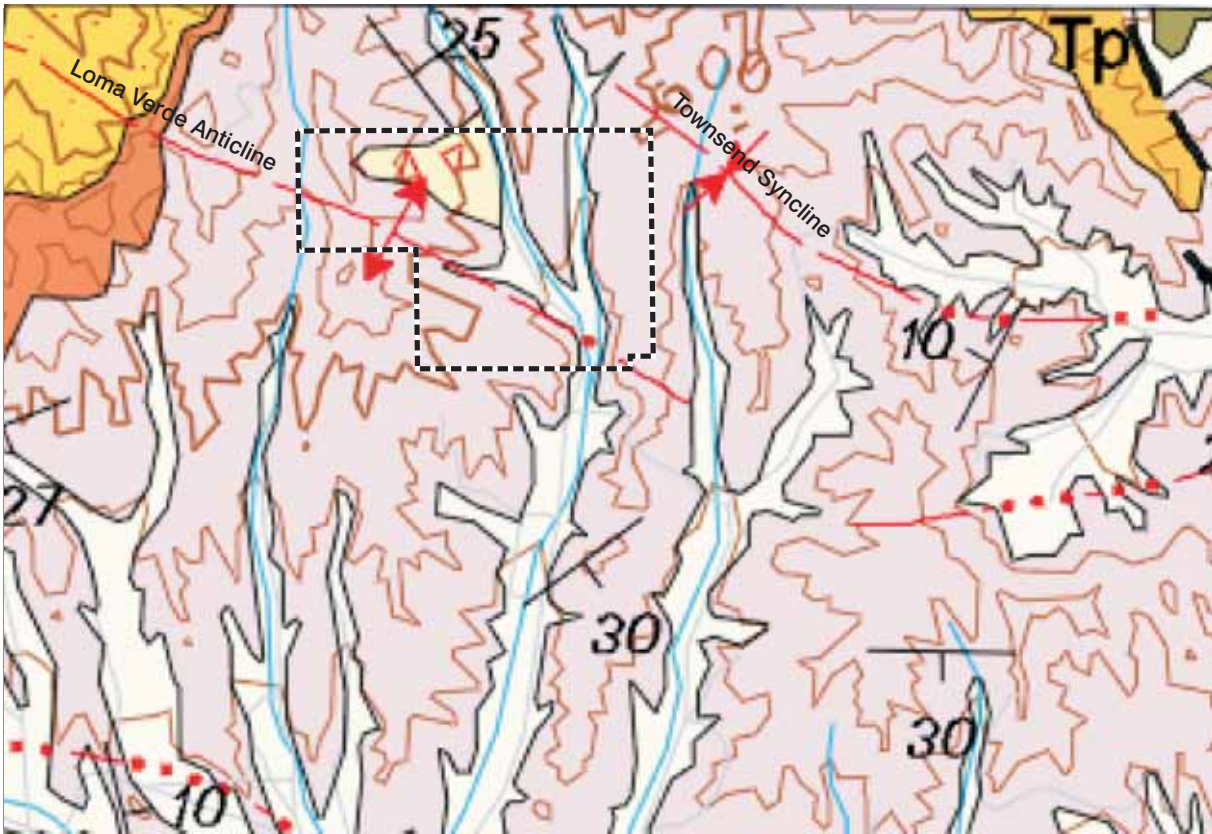
Impact 5.5-7 (Expansive Soil)

GEO-8 Prior to start of any earthwork, the District's project geotechnical engineer or engineering geologist shall conduct subsurface soil testing in Parcels 2 and 3 of the project site for expansion potential. The geotechnical engineer or engineering geologist shall document that the soils on finished pad grades will support the improvements planned.

5.5.8 Level of Significance After Mitigation

Geology and soils impacts would be less than significant.

Geologic Map



Legend



Qa—Alluvium, undifferentiated (late Holocene)—Unconsolidated gravel, sand and silt in active or recently active streambeds; chiefly stream deposited.



QTss—Saugus Formation, pebbly sandstone (early Pleistocene)



Qls—Landslide deposits (Holocene and late Pleistocene?)—Rock detritus from bedrock and surficial materials, broken in varying degrees from relatively coherent large blocks to disaggregated small fragments, deposited by landslide processes including slides, slumps, falls, topples and flows; generally unconsolidated; some dissected landslides may be as old as late Pleistocene.



Tpc—Pico Formation, sandstone and conglomerate—Sandstone and conglomerate.



Tps—Pico Formation, siltstone—Siltstone



Tp—Pico Formation (Pliocene)—Marine clayey siltstone and sandy siltstone. Soft, olive gray, containing interbeds of very fine-grained sandstone.

Holocene Epoch: 11,500 years before present to present

Pleistocene Epoch: 1.8 million years before present (mybp) to 11,500 years before present

Pliocene Epoch: 5.3 mybp to 1.8 mybp

Source: USGS 2005

0 3,000
Scale (Feet)



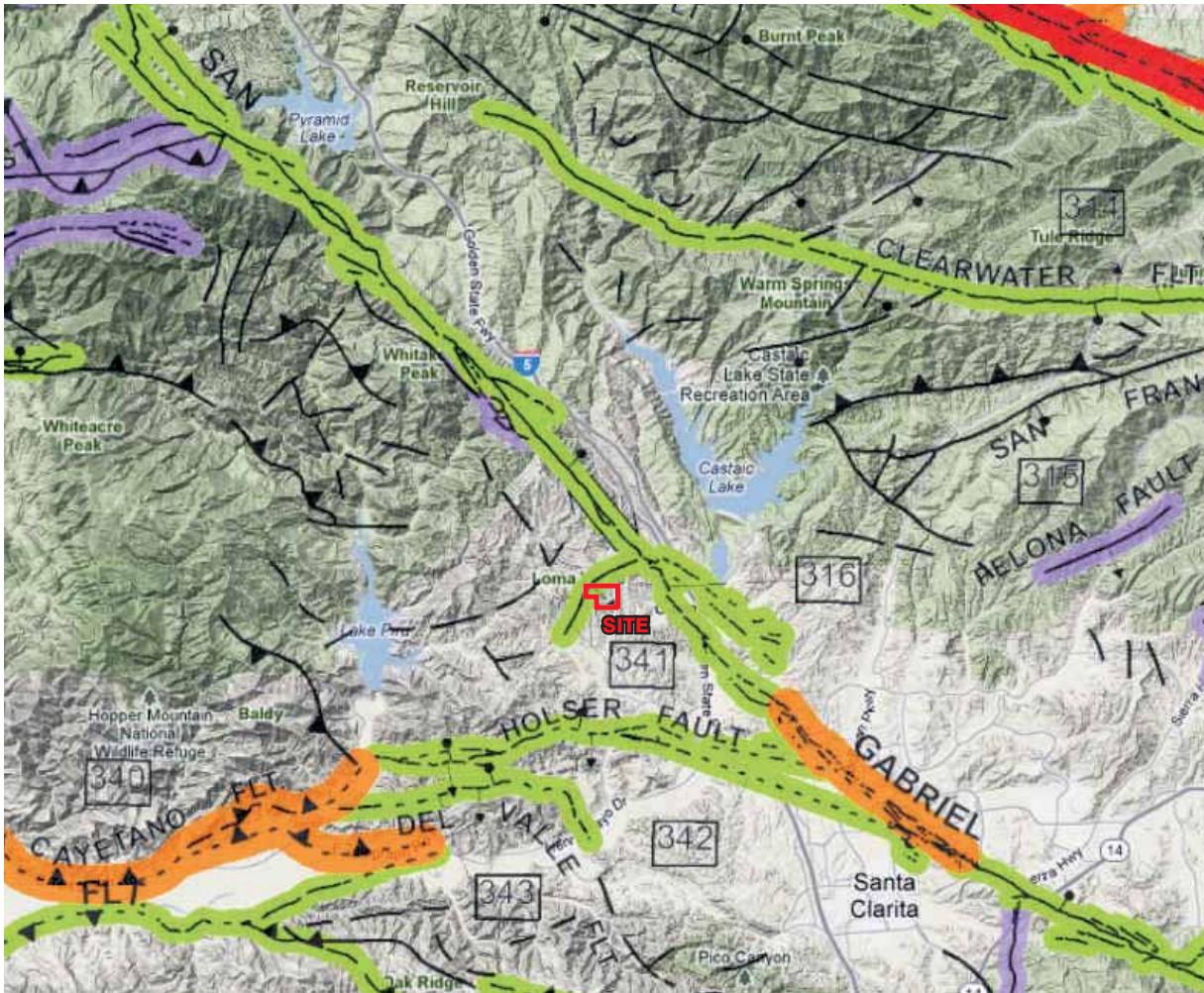
5. *Environmental Analysis*

GEOLOGY AND SOILS

This page intentionally left blank.

5. Environmental Analysis

Regional Fault Map



Legend

-  Fault along which historic (last 200 years) displacement has occurred
-  Holocene fault displacement (during past 11,700 years) without historic record
-  Late Quaternary fault displacement
-  Quaternary fault (age undifferentiated; Quaternary Period extends from the present to 1.6 million years before present)
-  Pre-Quaternary
-  Site Boundary

NOTE: Fault traces on land are indicated by solid lines where well located, by dashed lines where approximately located or inferred, and by dotted lines where concealed by younger rocks or by lakes or bays.

0 5
Scale (Miles)



Source: CGS 2011

Castaic High School Draft EIR

The Planning Center | DC&E • **Figure 5.5-2**

5. *Environmental Analysis*

GEOLOGY AND SOILS

This page intentionally left blank.

5. Environmental Analysis

5.6 GREENHOUSE GAS EMISSIONS

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential for the Castaic High School project (proposed project) to cumulatively contribute to greenhouse gas (GHG) emissions. Because no single project is large enough to result in a measurable increase in global concentrations of GHG emissions, climate change impacts of a project are considered on a cumulative basis.

The chapter evaluates consistency of the revised project with the strategies outlined in the California Air Resources Board's (CARB) Scoping Plan in accordance with the GHG reduction goals of Assembly Bill 32 (AB 32) and strategies proposed by the Southern California Association of Governments (SCAG) to reduce vehicle miles traveled (VMT) in the region, in accordance with Senate Bill 375 (SB 375). This chapter also considers policies and mitigation suggested by the California Attorney General and the California Air Pollution Control Officer's Association (CAPCOA) to reduce GHG emissions. GHG modeling is included in Appendix C.

5.6.1 Environmental Setting

Greenhouse Gases and Climate Change

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHG, to the atmosphere. Climate change is the variation of Earth's climate over time, whether due to natural variability or as a result of human activities. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor, ¹ carbon (CO₂), methane (CH₄), and ozone (O₃)—that are the likely causes of an increase in global average temperatures observed in the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2001). Table 5.6-1 lists the GHG applicable to the proposed project and their relative global warming potentials (GWP) compared to CO₂. Individual GHG are briefly described below the table.



Carbon dioxide (CO₂) enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.

Methane (CH₄) is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.

Nitrous oxide (N₂O) is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.

Fluorinated gases are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as High GWP gases.

¹ Water vapor (H₂O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant.

5. Environmental Analysis

GREENHOUSE GAS EMISSIONS

Table 5.6-1
Greenhouse Gases and Their Relative Global Warming Potential Compared to CO₂

<i>GHG</i>	<i>Atmospheric Lifetime (years)</i>	<i>Global Warming Potential Relative to CO₂¹</i>
Carbon Dioxide (CO ₂)	50 to 200	1
Methane (CH ₄) ²	12 (±3)	21
Nitrous Oxide (N ₂ O)	120	310
Hydrofluorocarbons:		
HFC-23	264	11,700
HFC-32	5.6	650
HFC-125	32.6	2,800
HFC-134a	14.6	1,300
HFC-143a	48.3	3,800
HFC-152a	1.5	140
HFC-227ea	36.5	2,900
HFC-236fa	209	6,300
HFC-4310mee	17.1	1,300
Perfluoromethane: CF ₄	50,000	6,500
Perfluoroethane: C ₂ F ₆	10,000	9,200
Perfluorobutane: C ₄ F ₁₀	2,600	7,000
Perfluoro-2-methylpentane: C ₆ F ₁₄	3,200	7,400
Sulfur Hexafluoride (SF ₆)	3,200	23,900

Source: USEPA 2008; IPCC 2001.

¹ Based on 100-Year Time Horizon of the Global Warming Potential (GWP) of the air pollutant relative to CO₂.

² The methane GWP includes the direct effects and those indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO₂ is not included.

- **Chlorofluorocarbons (CFCs)** are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are also ozone-depleting gases and are therefore being replaced by other GHG compounds covered under the Kyoto Protocol.
- **Perfluorocarbons (PFCs)** are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF₄] and perfluoroethane [C₂F₆]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are also used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high global warming potential.
- **Sulfur Hexafluoride (SF₆)** is a colorless gas soluble in alcohol and ether, slightly soluble in water. SF₆ is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.
- **Hydrochlorofluorocarbons (HCFCs)** contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent at destroying stratospheric ozone than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs.
- **Hydrofluorocarbons (HFCs)** contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and

5. Environmental Analysis

GREENHOUSE GAS EMISSIONS

personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs (USEPA 2008a).

California's GHG Sources and Relative Contribution

California is the second largest emitter of GHG in the United States, only surpassed by Texas, and the tenth largest GHG emitter in the world. However, because of more stringent air emission regulations, in 2001 California ranked fourth lowest in carbon emissions per capita and fifth lowest among states in CO₂ emissions from fossil fuel consumption per unit of Gross State Product (total economic output of goods and services) (CEC 2006).

CARB's latest update to the statewide GHG emissions inventory was conducted in 2012 for year 2009 emissions.² In 2009, California produced 457 million metric tons of CO₂-equivalent (CO₂e) GHG emissions.³ California's transportation sector is the single largest generator of GHG emissions, producing 37.9 percent of the state's total emissions. Electricity consumption is the second largest source, comprising 22.7 percent. Industrial activities are California's third largest source of GHG emissions, comprising 17.8 percent of the state's total emissions. Other major sources of GHG emissions include commercial and residential, recycling and waste, high global warming potential GHGs, agriculture, and forestry (CARB 2012).

Human Influence on Climate Change

For approximately 1,000 years before the Industrial Revolution, the amount of GHG in the atmosphere remained relatively constant. During the 20th century, however, scientists observed a rapid change in the climate and climate change pollutants that are attributable to human activities. The amount of CO₂ has increased by more than 35 percent since preindustrial times and has increased at an average rate of 1.4 parts per million (ppm) per year since 1960, mainly due to combustion of fossil fuels and deforestation (IPCC 2007). These recent changes in climate far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants (CAT 2006).



Climate change scenarios are affected by varying degrees of uncertainty. IPCC's 2007 IPCC Fourth Assessment Report projects that the global mean temperature increase from 1990 to 2100, under different climate-change scenarios, will range from 1.4 to 5.8°C (2.5 to 10.4°F). In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic timeframe but within a human lifetime (CAT 2006).

Potential Climate Change Impacts for California

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are also hard to predict. In California and western North America, observations of the climate have shown: 1) a trend toward warmer winter and spring temperatures, 2) a smaller fraction of precipitation is falling as snow, 3) a decrease in the

² Methodology for determining the statewide GHG inventory is not the same as the methodology used to determine statewide GHG emissions under Assembly Bill 32 (AB 32).

³ CO₂-equivalence is used to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. The global warming potential of a GHG is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

5. Environmental Analysis

GREENHOUSE GAS EMISSIONS

amount of spring snow accumulation in the lower and middle elevation mountain zones, 4) an advance snowmelt of 5 to 30 days earlier in the springs, and 5) a similar shift (5 to 30 days earlier) in the timing of spring flower blooms (CAT 2006). According to the California Climate Action Team (CAT), even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 5.6-1), and the inertia of the Earth's climate system could produce as much as 0.6°C (1.1°F) of additional warming. Consequently, some impacts from climate change are now considered unavoidable. Global climate change risks are shown in Table 5.6-2 and include public health impacts, water resources impacts, agricultural impacts, coast sea level impacts, forest and biological resource impacts, and electricity impacts. Specific climate change impacts that could affect the project include health impacts from a reduction in air quality, water resources impacts from a reduction in water supply, and increased energy demand.

Table 5.6-2
Summary of Global Climate Change Risks to California

Impact Category	Potential Risk
Public Health Impacts	• Poor air quality made worse • More severe heat
Water Resources Impacts	• Decreasing Sierra Nevada snow pack • Challenges in securing adequate water supply • Potential reduction in hydropower • Loss of winter recreation
Agricultural Impacts	• Increasing temperature • Increasing threats from pests and pathogens • Expanded ranges of agricultural weeds • Declining productivity • Irregular blooms and harvests
Coast Sea Level Impacts	• Accelerated sea level rise • Increasing coastal floods • Shrinking beaches • Worsened impacts on infrastructure
Forest and Biological Resource Impacts	• Increasing risk and severity of wildfires • Lengthening of the wildfire season • Movement of forest areas • Conversion of forest to grassland • Increasing threats from pest and pathogens • Declining forest productivity • Shifting vegetation and species distribution • Altered timing of migration and mating habits • Loss of sensitive or slow-moving species
Electricity	• Potential reduction in hydropower • Increased energy demand

Sources: CEC 2006; CEC 2008.

Regulatory Setting

Regulation of GHG Emissions on a National Level

The United States Environmental Protection Agency (EPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 U.S. Supreme Court

5. Environmental Analysis

GREENHOUSE GAS EMISSIONS

decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements, but allow the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation (EPA 2009).

The EPA's endangerment finding covers emissions of six key GHGs—CO₂, CH₄, N₂O, hydrofluorocarbons, perfluorocarbons, and SF₆—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world (the first three are applicable to the proposed project).

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 metric tons (MTons) or more per year are required to submit an annual report.

Regulation of GHG Emissions on a State Level

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in AB 32, the Global Warming Solutions Act, and Executive Order S-03-05. AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in Executive Order S-3-05, signed June 1, 2005. Executive Order S-03-05 set the following GHG reduction targets for the state:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050



AB 32 directed CARB to adopt discrete early action measures to reduce GHG emissions and outline additional reduction measures to meet the 2020 target. Based on the GHG emissions inventory conducted for the Scoping Plan by CARB, GHG emissions in California by 2020 are anticipated to be approximately 596 million metric tons (MMTons). In December 2007, CARB approved a 2020 emissions limit of 427 MMTons (471 million tons) for the state. The 2020 target requires a total emissions reduction of 169 MMTons, 28.5 percent from the projected emissions of the business-as-usual (BAU) scenario for the year 2020 (i.e., 28.5 percent of 596 MMTons) (CARB 2008).⁴

Since release of the 2008 Scoping Plan, CARB has updated the statewide GHG emissions inventory to reflect GHG emissions in light of the economic downturn and measures not previously considered in the 2008 Scoping Plan baseline inventory. The updated forecast predicts emissions to be 507 MMTons by 2020. The new inventory identifies that an estimated 80 MMTons of reductions are necessary to achieve the statewide emissions reduction of AB 32 by 2020, 15.7 percent of the projected emissions compared to BAU in year 2020 (i.e., 15.7 percent of 507 MMTons) (CARB 2012).

In order to effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 MTons per year, prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012. The Climate Action Registry Reporting

⁴ CARB defines BAU in its Scoping Plan as emissions levels that would occur if California continued to grow and add new GHG emissions but did not adopt any measures to reduce emissions. Projections for each emission-generating sector were compiled and used to estimate emissions for 2020 based on 2002–2004 emissions intensities. Under CARB's definition of BAU, new growth is assumed to have the same carbon intensities as was typical from 2002 through 2004.

5. Environmental Analysis

GREENHOUSE GAS EMISSIONS

Online Tool was established through the Climate Action Registry to track GHG emissions. Key elements of CARB's GHG reduction plan include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a mix of 33 percent for energy generation from renewable sources;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system for large stationary sources;
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard (LCFS);⁵
- Creating target fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the state's long-term commitment to AB 32 implementation.

Table 5.6-3 shows the proposed reductions from regulations and programs outlined in the Scoping Plan. While local government operations were not accounted for in achieving the 2020 emissions reduction, CARB estimates that land use changes implemented by local governments that integrate jobs, housing, and services result in a reduction of 5 MMTons, which is approximately 3 percent of the 2020 GHG emissions reduction goal. In recognition of the critical role local governments play in successful implementation of AB 32, CARB is recommending GHG reduction goals of 15 percent of today's levels by 2020 to ensure that municipal and community-wide emissions match the state's reduction target. Measures that local governments take to support shifts in land use patterns are anticipated to emphasize compact, low-impact growth over development in greenfields, resulting in fewer VMT (CARB 2008).

Energy Conservation Standards

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Commission (CEC) in June 1977 and most recently revised in 2008 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On May 31, 2012, the CEC adopted the 2013 Building and Energy Efficiency Standards, which go into effect on January 1, 2014. Buildings that are constructed in accordance with the 2013 Building and Energy Efficiency Standards are 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses.

⁵ On December 29, 2011, the U.S. District Court for the Eastern District of California issued several rulings in the federal lawsuits challenging the LCFS. One of the court's rulings preliminarily enjoins the CARB from enforcing the regulation during the pendency of the litigation. In January 2012, the CARB appealed the decision to the Ninth Circuit Court of Appeals (Ninth Circuit) and moved to stay the injunction pending resolution of the appeal. On April 23, 2012, the Ninth Circuit granted the CARB's motion to stay the injunction while it continues to consider the appeal of the District Court's decision.

5. Environmental Analysis

GREENHOUSE GAS EMISSIONS

Table 5.6-3
Scoping Plan Greenhouse Gas Reduction Measures and
Reductions toward 2020 Target

<i>Recommended Reduction Measures</i>	<i>Reductions Counted toward 2020 Target of 169 MMT CO₂e</i>	<i>Percentage of Statewide 2020 Target</i>
Cap and Trade Program and Associated Measures		
California Light-Duty Vehicle GHG Standards	31.7	19%
Energy Efficiency	26.3	16%
Renewable Portfolio Standard (33 percent by 2020)	21.3	13%
Low Carbon Fuel Standard	15	9%
Regional Transportation-Related GHG Targets ¹	5	3%
Vehicle Efficiency Measures	4.5	3%
Goods Movement	3.7	2%
Million Solar Roofs	2.1	1%
Medium/Heavy Duty Vehicles	1.4	1%
High Speed Rail	1.0	1%
Industrial Measures	0.3	0%
Additional Reduction Necessary to Achieve Cap	34.4	20%
Total Cap and Trade Program Reductions	146.7	87%
Uncapped Sources/Sectors Measures		
High Global Warming Potential Gas Measures	20.2	12%
Sustainable Forests	5	3%
Industrial Measures (for sources not covered under cap and trade program)	1.1	1%
Recycling and Waste (landfill methane capture)	1	1%
Total Uncapped Sources/Sectors Reductions	27.3	16%
Total Reductions Counted toward 2020 Target	174	100%
Other Recommended Measures – Not Counted toward 2020 Target		
State Government Operations	1.0 to 2.0	1%
Local Government Operations	To Be Determined	NA
Green Buildings	26	15%
Recycling and Waste	9	5%
Water Sector Measures	4.8	3%
Methane Capture at Large Dairies	1	1%
Total Other Recommended Measures – Not Counted toward 2020 Target	42.8	NA

Source: CARB 2008.

The percentages in the right-hand column add up to more than 100 percent because the emissions reduction goal is 169 MMTons and the Scoping Plan identifies 174 MMTons of emissions reductions strategies.

MMT CO₂e = million metric tons of CO₂e

¹ Reductions represent an estimate of what may be achieved from local land use changes. It is not the SB 375 regional target.

² According to the Measure Documentation Supplement to the Scoping Plan, local government actions and targets are anticipated to reduce vehicle miles by approximately 2 percent through land use planning, resulting in a potential GHG reduction of 2 million metric tons of CO₂e (or approximately 1.2 percent of the GHG reduction target). However, these reductions were not included in the Scoping Plan reductions to achieve the 2020 target.



The 2006 Appliance Efficiency Regulations (Title 20, CCR Sections 1601 through 1608) were adopted by the on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non-federally regulated appliances. While these regulations are now often viewed as “business-as-usual,” they exceed the standards imposed by all other states and they reduce GHG emissions by reducing energy demand.

5. Environmental Analysis

GREENHOUSE GAS EMISSIONS

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code (Title 24, California Code of Regulations). The green building standards that became mandatory in the 2010 edition of the code established voluntary standards on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011.

Renewable Power Requirements

A major component of California's Renewable Energy Program is the renewable portfolio standard (RPS), established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. CARB has now approved an even higher goal of 33 percent by 2020. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.

Vehicle Emission Standards/Improved Fuel Economy

Vehicle GHG emission standards were enacted under AB 1493 (Pavley I) and the LCFS. Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020.

Regulation of GHG Emissions on a Regional Level

In 2008, SB 375 was adopted and was intended to represent the implementation mechanism necessary to achieve the GHG emissions reductions targets established in the Scoping Plan for the transportation sector as it relates to local land use decisions that affect travel behavior. Implementation is intended to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations with local land use planning to reduce vehicle miles traveled and vehicle trips. Specifically, SB 375 requires CARB to establish GHG emissions reduction targets for each of the 17 regions in California managed by a metropolitan planning organization (MPO). Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target. SCAG is the MPO for the southern California region, which includes the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. SCAG's targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035.

The 2020 targets are smaller than the 2035 targets because a significant portion of the built environment in 2020 has been defined by decisions that have already been made. In general, the 2020 scenarios reflect that more time is needed for large land use and transportation infrastructure changes. Most of the reductions in the interim are anticipated to come from improving the efficiency of the region's existing transportation network. The proposed targets would result in 3 MMTons of GHG reductions by 2020 and 15 MMTons of GHG reductions by 2035. Based on these reductions, the passenger vehicle target in CARB's Scoping Plan (for AB 32) would be met (CARB 2010).

5. Environmental Analysis

GREENHOUSE GAS EMISSIONS

SB 375 requires the MPOs to prepare a Sustainable Communities Strategy (SCS) in their regional transportation plan. For the SCAG region, the Draft SCS was released in December 2011 and adopted by SCAG on April 4, 2012 (SCAG 2012). The adopted SCS sets forth a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement). The adopted SCS provides growth strategies that achieve and exceed the regional GHG emissions reduction targets set by CARB. It will achieve a 9 percent reduction in GHG emissions by year 2020 and 16 percent reduction by year 2035 compared to the 2005 level on a per capita basis (SCAG 2012). However, the SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS, but provides incentives for consistency for governments and developers. If the SCS is unable to achieve the regional GHG emissions reduction targets, the MPO would be required to prepare an Alternative Planning Strategy that shows how the GHG emissions reduction target could be achieved through other development patterns, infrastructure, and/or transportation measures.

5.6.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

- GHG-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- GHG-2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

South Coast Air Quality Management District

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD has convened a GHG CEQA Significance Threshold Working Group (Working Group). Based on the last Working Group meeting (Meeting No. 15) held in September 2010, SCAQMD is proposing to adopt a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency:

- Tier 1 If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.
- Tier 2 If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.

For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, SCAQMD requires an assessment of GHG emissions. SCAQMD is proposing a screening-level threshold of 3,000 MTons annually for all land use types or the following land-use-specific thresholds: 1,400 MTons for commercial projects, 3,500 MTons for residential projects, or 3,000 MTons for mixed-use projects. This bright-line threshold is based on a review of the Governor's Office of Planning and Research database of CEQA projects. Based on their review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds identified above. Therefore, projects that do not exceed the bright-line threshold would have a nominal, and therefore, less than cumulatively considerable impact on GHG emissions:

- Tier 3 If GHG emissions are less than the screening-level threshold, project-level and cumulative GHG emissions are less than significant.



5. Environmental Analysis

GREENHOUSE GAS EMISSIONS

- Tier 4 If emissions exceed the screening threshold, a more detailed review of the project's GHG emissions is warranted.

SCAQMD is proposing to adopt an efficiency target for projects that exceed the screening threshold. The current recommended approach is per capita efficiency targets. SCAQMD is not recommending use of a percent emissions reduction target. Instead, SCAQMD proposes a 2020 efficiency target of 4.8 MTons per year per service population (MTons/year/SP) for project-level analyses and 6.6 MTons/year/SP for plan level projects (e.g., program-level projects such as general plans).⁶ For the purpose of this project, SCAQMD's project-level thresholds are used. If projects exceed these per capita efficiency targets, GHG emissions would be considered potentially significant in the absence of mitigation measures.

5.6.3 Environmental Impacts

On December 30, 2009, the Natural Resources Agency adopted amendments to the CEQA Guidelines, which became effective on March 18, 2010, and include new requirements to evaluate GHG emissions. Pursuant to the amended CEQA Guidelines, a lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment:

1. The extent to which the project may increase (or reduce) GHG emissions compared to the existing environmental setting;
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;
3. The extent to which the project complies with regulations or requirements adopted to implement an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions.⁷

GHG emissions modeling was conducted for the proposed project using SCAQMD's California Emissions Estimator Model (CalEEMod). Life cycle emissions are not included in this analysis because not enough information is available for the proposed project, and therefore life cycle GHG emissions would be speculative.⁸

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.6-1: THE PROPOSED PROJECT WOULD NOT GENERATE GHG EMISSIONS THAT WOULD EXCEED THE SIGNIFICANCE CRITERIA. [THRESHOLD GHG-1]

Impact Analysis: As described previously, a project does not generate enough GHG emissions on its own to influence global climate change; therefore, this impact analysis measures the project's contribution to the

⁶ It should be noted that the Working Group also considered efficiency targets for 2035 for the first time in this Working Group meeting.

⁷ OPR recommendations include a requirement that such a plan be adopted through a public review process and include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

⁸ Life cycle emissions include indirect emissions associated with materials manufacture. However, these indirect emissions involve numerous parties, each of which is responsible for GHG emissions of their particular activity. Because the amount of materials consumed during the operation or construction of the proposed project is not known, the origin of the raw materials purchased is not known, and manufacturing information for those raw materials are also not known, calculation of life cycle emissions would be speculative.

5. Environmental Analysis

GREENHOUSE GAS EMISSIONS

cumulative environmental impact. Buildout of the proposed Castaic High School project would result in direct and indirect GHG emissions from transportation, energy (natural gas use), water and wastewater generation, and waste disposal. In addition, project-related construction emissions are amortized over a 30-year lifetime in accordance with SCAQMD's proposed methodology. Transportation sources of GHG emissions are based on the traffic impact analysis conducted by Austin-Foust Associates (see Appendix I). Water use is based on indoor and outdoor water demand provided by the Newhall County Water District (see Section 5.15, *Utilities and Service Systems*). Waste generation is calculated based on rates from CalRecycle (see Section 5.15, *Utilities and Service Systems*). GHG emissions were modeled using CalEEMod.

The proposed high school would construct 250,000 square feet of new school building facilities that would accommodate up to 2,600 students. Up to 7,384 average daily trips (ADT) would be generated on a typical school day, and a full-capacity event at the proposed onsite football stadium would generate an additional 2,860 daily trips. Project-related GHG emissions are shown in Table 5.6-4. The project's GHG emissions are separated into emission sources for the applicable GHG emissions sectors.

Table 5.6-4
Project-Related GHG Emissions

Source	GHG MTons/Year	Percent of Project Total MTons/Year
Energy	636	9%
Mobile	6,162	85%
Waste	130	2%
Water	65	1%
Amortized Construction Emissions ¹	242	3%
Total Annual Emissions	7,235	100%
SCAQMD's Proposed Screening Threshold	3,000	NA
Emissions Per Service Population (SP)²	2.8 MTons/SP	NA
SCAQMD Proposed Project-Level Efficiency Metric	4.8 MTons/SP	NA

Source: CalEEMod, Version 2011.1. Assumes implementation of the California Green Building Code and 2008 Building and Energy Efficiency Standards.

MTons: metric tons

¹ Total construction emissions are amortized over 30 years.

² Based on a service population of 2,600 students. Addition of staff would decrease the emissions per service population even further.



The proposed project at buildout would generate 7,235 MTons of GHG per year. The total GHG emissions from the project would therefore exceed SCAQMD's proposed screening threshold of 3,000 MTons (Tier 3). As project-related GHG emissions would exceed the SCAQMD's Tier 3 threshold, these emissions were compared to the proposed per capita threshold (Tier 4). As shown in the table, operation of the proposed high school project would not exceed SCAQMD's proposed per capita significance threshold. Because the GHG emissions associated with the project would not exceed SCAQMD's Tier 4 screening threshold, the proposed project's cumulative contribution to GHG emissions would be less than significant.

IMPACT 5.6-2: THE PROPOSED PROJECT WOULD NOT CONFLICT WITH PLANS ADOPTED FOR THE PURPOSE OF REDUCING GREENHOUSE GAS EMISSIONS. [THRESHOLD GHG-2]

Impact Analysis: In accordance with AB 32, CARB developed the Scoping Plan to outline the state's strategy to achieve 1990 level emissions by year 2020. To estimate the reductions necessary, CARB

5. Environmental Analysis

GREENHOUSE GAS EMISSIONS

projected statewide 2020 BAU GHG emissions and identified that the state as a whole would be required to reduce GHG emissions by 28.5 percent from year 2020 BAU to achieve the targets of AB 32 (CARB 2008). The County of Los Angeles has not adopted a GHG reduction plan. No other GHG reduction plans are applicable for the proposed project. Statewide strategies to reduce GHG emissions include the LCFS, California Appliance Energy Efficiency regulations, California Building Standards (e.g., CALGreen and the 2008 Building and Energy Efficiency Standards), California RPS, changes in the corporate average fuel economy standards (e.g., Pavley I and Pavley II [Advanced Clean Cars]), and other measures that would ensure the state is on target to achieve the GHG emissions reduction goals of AB 32. Statewide GHG emissions reduction measures that are being implemented over the next eight years would assist in reducing the project's GHG emissions. The 2012 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) was adopted by SCAG on April 4, 2012. The 2012 RTP/SCS is based on local land use projections in the cities' and counties's general plans.

While the proposed project is inconsistent with the existing zoning and general plan designations, its development would fulfill the educational needs of the existing local residences. Currently, it is necessary for high school students in the Castaic community to travel to high school(s) outside of the community, which also requires travel on Interstate 5 (I-5). Construction of the proposed high school may result in students residing in the southernmost portion of the planned Castaic High School attendance boundary to travel a farther distance. However, because construction of the proposed high school would permit students in the Castaic community to attend a high school within the community, overall VMT would be reduced. Travel on I-5 would also be minimized. Additionally, construction of the proposed high school would greatly minimize VMT for the future planned residential communities to be developed near the project site. Therefore, the proposed project would not conflict with plans adopted for the purpose of reducing GHG emissions.

5.6.4 Cumulative Impacts

As described under Impact 5.6-1, project-related GHG emissions are not confined to a particular air basin but are dispersed worldwide. Consequently, it is speculative to determine how project-related GHG emissions would contribute to global climate change and how global climate change may impact California. Therefore, impacts identified under Impact 5.6-1 are not project-specific impacts to global warming, but the project's contribution to this cumulative impact. As discussed above, since the project would not exceed the SCAQMD's proposed per capita GHG threshold, the project's GHG emissions and contribution to global climate change impacts are not considered cumulatively considerable.

5.6.5 Existing Regulations and Standard Conditions

- AB 32: California Global Warming Solutions Act
- Executive Order S-3-05: Greenhouse Gas Emission Reduction Targets
- Pavley Fuel Efficiency Standards (AB1493). Establishes fuel efficiency ratings for new cars.
- California Building Code. Establishes energy efficiency requirements for new construction.
- Title 20 California Code of Regulations (Appliance Energy Efficiency Standards). Establishes energy efficiency requirements for appliances.
- Title 17 California Code of Regulations (Low Carbon Fuel Standard). Requires the carbon content of fuel sold in California to be 10 percent less by 2020.

5. Environmental Analysis

GREENHOUSE GAS EMISSIONS

- California Water Conservation in Landscaping Act of 2006 (AB 1881). Requires local agencies to adopt the Department of Water Resources updated Water Efficient Landscape Ordinance or equivalent by January 1, 2010, to ensure efficient landscapes in new development and reduced water waste in existing landscapes.
- Statewide Retail Provider Emissions Performance Standards (SB 1368). Requires energy generators to achieve performance standards for GHG emissions.
- Renewable Portfolio Standards (SB 1078). Requires electric corporations to increase the amount of energy obtained from eligible renewable energy resources to 20 percent by 2010 and 33 percent by 2020.
- California Code of Regulations, Title 24: Energy Efficiency Standards

5.6.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements the following Impact 5.6-1 and Impact 5.6-2 would be less than significant.

5.6.7 Mitigation Measures

No mitigation measures are required.

5.6.8 Level of Significance After Mitigation

Greenhouse gas emission impacts would be less than significant.



5. *Environmental Analysis*

GREENHOUSE GAS EMISSIONS

This page intentionally left blank.

5. Environmental Analysis

5.7 HAZARDS AND HAZARDOUS MATERIALS

This section evaluates the potential impacts of the proposed project on human health and the environment due to exposure to hazardous materials or conditions associated with the project site, project construction, and project operations. Potential project impacts and appropriate mitigation measures or standard conditions are included as necessary. The analysis in this section is based, in part, upon the following sources. All studies are in Appendix G of this Draft EIR.

- *Water Tank Risk Assessment for Castaic High School. The Planning Center|DC&E, July 2012.*
- *Phase I Environmental Site Assessment Update for Proposed Castaic High School Romero Canyon. The Planning Center|DC&E, March 2012.*
- *Preliminary Environmental Assessment Report for Proposed Castaic High School, The Planning Center, March 2011.*
- *Phase I Environmental Site Assessment, Proposed Castaic High School Site, Romero Canyon Road Property, California Environmental, February 2010.*

All figures are located at the end of this section.

5.7.1 Environmental Setting

The site is presently in a natural undeveloped state with the exception of dirt roads. The project site is hilly and rugged with steep natural slopes and alluvial-filled canyon bottoms. The elevation difference across the property is about 650 feet, ranging from about 1,730 feet above mean sea level (amsl) near the south-central portion to 2,380 feet amsl near the northwestern portion. Natural drainage channels extend north-south through the property.



Hazardous Materials and Hazardous Wastes

Various federal, state, and local agencies are responsible for determining whether or not a material or waste is hazardous. These determinations vary by public agency. Broadly defined, a hazardous material or waste exhibits one or more of the following characteristics: ignitability, corrosiveness, reactivity, and toxicity; and it has the potential to harm human health or the environment when improperly transported, stored, treated or disposed of. Hazardous materials are part of many consumer products (e.g., paint, batteries) and services (e.g., dry cleaning processes) or may be used in the manufacture of end products (e.g., computer monitors). Hazardous wastes are the chemical remains of hazardous materials that have no further intended use and require treatment and/or disposal. Hazardous waste can be a solid, semi-solid, liquid, or a contained gaseous substance. In some instances, hazardous wastes by definition are also considered to be hazardous materials. The Los Angeles County Fire Department Health Hazardous Materials Division (LACoFD HHMD) considers hazardous materials to be chemicals and substances that exhibit physical or health hazards, whether the materials are in a usable or waste state.

Fire Hazard Zone

The project site is in a Very High Fire Hazard Severity Zone designated by the California Department of Forestry and Fire Prevention (CAL FIRE 2007). The site is in a State Responsibility Area designated by CAL FIRE, that is, an area where the state has financial responsibility for wildland fire protection. The Vegetation types onsite include chaparral, California sagebrush, oak woodland, grassland, and disturbed plant

5. Environmental Analysis

HAZARDS AND HAZARDOUS MATERIALS

communities; vegetation on and near the site can provide fuel for wildfires. The Ranch (Castaic/Piru) Fire in October 2007 burned over 58,000 acres extending from near Townsend Peak about five miles north of the project site westward to near the Community of Ojai in Ventura County (CAL FIRE 2012).

Fire protection in the project area is provided by Battalion 6 of the Los Angeles County Fire Department (LACoFD). The LACoFD provides a wide range of services, including emergency medical services, fire prevention and suppression, and urban search and rescue, to numerous cities and unincorporated areas of Los Angeles County. The LACoFD also operates a Forestry Division and a Health Hazardous Materials Division.

Fire Station 149, at 31770 Ridge Route in Castaic, and Station 76, at 27223 Henry Mayo Drive in Valencia, are the closest fire stations to the site. Response to the project site is provided from Fire Station 76 and response time is approximately 5 to 7 minutes.

Regulatory Background

Hazardous Materials and Hazardous Wastes

CEQA Guidelines (California Code of Regulations, Title 14) Section 15186

This section requires that school projects, as well as projects proposed near schools, examine potential health impacts resulting from exposure to hazardous materials, wastes, and substances. Such impacts are to be examined and disclosed in a negative declaration or EIR. CEQA Guidelines Section 15186 describes three types of sites for which specific findings must be made. When a project involves the purchase of a school site or the construction of a secondary or elementary school, the negative declaration or EIR must provide enough information to determine whether the property is (1) the site of a current or former hazardous waste or solid waste disposal facility, and if so, whether wastes have been removed; (2) a hazardous substance release site identified by the Department of Toxic Substances Control (DTSC) in a current list adopted pursuant to Section 25356 of the Health and Safety Code for removal or remedial action pursuant to Chapter 6.8 (commencing with Section 25300) of Division 20 of the Health and Safety Code; or (3) the site of one or more buried or above-ground pipelines that carry hazardous substances, acutely hazardous materials, or hazardous wastes, as defined in Division 20 of the Health and Safety Code.

In developing such information, the lead agency is to consult with the county or city administering agency (as designated pursuant to Section 25502 of the Health and Safety Code) and with any air pollution control district or air quality management district having jurisdiction to identify facilities within one-fourth mile of the proposed school site that might reasonably be anticipated to emit hazardous emissions or handle hazardous or acutely hazardous material, substances, or waste. Based on this consultation, the school board or district will determine whether such facilities exist, and if so, whether: 1) the health risks from the facilities do not and will not constitute an actual or potential endangerment of public health to persons attending or working at the proposed school; and 2) corrective measures required under an existing order by another agency having jurisdiction over the facilities will, before the school is occupied, mitigate all chronic or accidental hazardous air emissions to levels that do not constitute any actual or potential public health danger to persons attending or working at the proposed school.

CEQA Statute (California Public Resources Code, Division 13 Environmental Protection) Section 21092.6

This section directs the lead agency to consult the lists compiled pursuant to Section 65962.5 of the Government Code to determine whether the project and any alternatives are located on a site that is included on any list.

5. Environmental Analysis

HAZARDS AND HAZARDOUS MATERIALS

Education Code Section 17213(a)

Under Education Code Section 17213(a), the Department of Toxic Substances Control (DTSC) is the State agency responsible for providing environmental review of proposed new and expansion school sites as pertaining to on-site and off-site contamination hazards. In accordance to Section 17213.1 of the California Education Code, a determination of “No Further Action” must be obtained from DTSC pertaining to environmental investigation and clearance before a new school site is approved for acquisition or construction.

Building and Access Requirements for Wildland-Urban Interface Fire Areas

California Building Code (California Code of Regulations, Title 24, Part 2)

Chapter 7A of the California Building Code (CBC), Materials and Methods for Exterior Wildfire Exposure, prescribes building materials and construction methods for new buildings in a Fire Hazard Severity Zone. Chapter 7A contains requirements for roofing; attic ventilation; exterior walls; exterior windows and glazing; exterior doors; decking; protection of underfloor, appendages, and floor projections; and ancillary structures.

5.7.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines and CCR Title 5, a project would normally have a significant effect on the environment, or the environment would have a significant impact on the project, if the project would:

- HAZ-1 Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- HAZ-2 Create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- HAZ-3 Involve a site that contains one or more pipelines, situated underground or aboveground, which carry hazardous substances, acutely hazardous materials or hazardous wastes, unless the pipeline is a natural gas line that is used only to supply natural gas to that school or neighborhood.
- HAZ-4 Be located near an above-ground water or fuel storage tank or within 1,500 feet of an easement of an above ground or underground pipeline that can pose a safety hazard to the site.
- HAZ-5 Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- HAZ-6 Create an air quality hazard due to the placement of a school within one-quarter mile of: a) permitted and non-permitted facilities identified by the jurisdictional air quality control board or air pollution control district; b) freeways and other busy traffic corridors; c) large agricultural operations; and/or d) a rail yard, which might reasonably be anticipated to emit hazardous air emissions, or handle hazardous or acutely hazardous material, substances or waste.
- HAZ-7 Locate a school in an area designated in a city, county, or city and county general plan for agricultural use and zoned for agricultural production, and if so, do neighboring agricultural uses have the potential to result in any public health and safety issues that may affect the pupils and employees at the school site.



5. Environmental Analysis

HAZARDS AND HAZARDOUS MATERIALS

- HAZ-8 Be located on a site where the property line is less than the following distances from the edge of respective power line easements: 1) 100 feet of a 50-133 kV line; 2) 150 feet of a 220-230 kV line; or 3) 350 feet of a 500-550 kV line.
- HAZ-9 Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.
- HAZ-10 Be the site of a current or former hazardous waste disposal site or solid waste disposal site and, if so, have the wastes been removed.
- HAZ-11 Be on a site containing or underlain by naturally occurring hazardous materials.
- HAZ-12 Be on a site within 2,000 feet of a significant disposal of hazardous waste.
- HAZ-13 Locate a school within two miles, measured by air line, of that point on an airport runway or potential runway included in an airport master plan that is nearest to the site.
- HAZ-14 Locate a school within the vicinity of a private airstrip, resulting in a safety hazard for people residing or working in the project area.
- HAZ-15 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- HAZ-16 Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold HAZ-1, HAZ-3, HAZ-5, HAZ-6, HAZ-7, HAZ-8, HAZ-9, HAZ-10, HAZ-11, HAZ-12, HAZ-13, HAZ-14

The preceding thresholds will not be addressed in the EIR analysis, except for Threshold HAZ-14 that relates to private airstrips. The project would include a helipad for emergency response and emergency evacuation uses; therefore, although the initial study determined private airstrip impacts to be less than significant, for full disclosure the EIR will analyzed it further.

5.7.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

5. Environmental Analysis

HAZARDS AND HAZARDOUS MATERIALS

IMPACT 5.7-1: THE PROJECT WOULD NOT RESULT IN A FORESEEABLE UPSET OR ACCIDENT CONDITION INVOLVING THE RELEASE OF HAZARDOUS MATERIALS INTO THE ENVIRONMENT. [THRESHOLD HAZ-2]

Impact Analysis: General construction of the proposed school would not require extensive or ongoing use of acutely hazardous materials or substances. However, construction activities such as onsite fueling or servicing of construction equipment may require the transport, storage, use, or disposal of some hazardous materials. Use of the construction-related hazardous materials would be short term and would be subject to federal, state, and local health and safety requirements.

Project construction would involve grading, excavation, trenching, and other activities with the potential to release soil materials or residues into the environment. Potential impacts associated with the release of these materials may occur if the site was previously used for purposes involving the storage or use of hazardous materials or otherwise contains materials considered hazardous.

Based on the nature and use of hazardous materials during operation of the proposed school; there are no reasonably foreseeable upset and accident conditions that would create a significant hazard to the public due to the release of hazardous materials. In the unlikely event of such an occurrence, school administrators would immediately contact the local police and/or fire department(s) for appropriate emergency response. Procedures for systematic evacuation of students from classrooms and other school facilities would be established and practiced regularly.

A Phase I Environmental Site Assessment was completed for the entire 198-acre project site in February 2010. A Preliminary Environmental Assessment (PEA) was completed for parcels 1 and 4 in March 2011 and a Phase 1 Environmental Site Assessment was completed for parcels 2 and 3 in March 2012.



Preliminary Environmental Assessment

An abandoned oil well was identified on parcel. The Devils Canyon No. 1 oil well was drilled in 1946 and abandoned in 1947 as a dry, nonproducing, exploratory well. The well is next to a proposed Junior Varsity baseball field near the south end of the proposed campus, as shown in Figure 5.7-1, *Historic Oil Well Location*. The abandonment and closing of the well did not meet current standards of the Division of Oil, Gas, and Geothermal Resources (DOGGR). Additionally, in 2010 a five-gallon bucket was found that was speculated to have contained diesel fuel, creating a recognized environmental conditions (REC) (California Environmental 2010).

The five-gallon bucket was not found at the site during the 2011 PEA investigations. The landowner identified the area of the bucket and said that the bucket did not contain fuel oil but was an empty lube oil bucket that a dozer operator had left. No staining or odors were noted; soil samples were collected.

Soil and Soil Gas Sampling and Testing

A total of 13 soil samples were collected from four locations on the project site. A total of 6 soil gas samples were collected from three locations near the exploratory oil well. The soil samples were collected at three locations in the vicinity of the oil well and at the alleged bucket. The samples at the well were collected at three locations from the ground surface to approximately 6 inches below ground surface (bgs), 5 feet bgs, 10 feet bgs, and at 15 feet bgs. A total of 12 discrete soil samples (plus one duplicate) were analyzed for metals; 13 soil samples (plus one duplicate) were analyzed for total petroleum hydrocarbon (TPH), and 6 samples from the area of the well were analyzed for semivolatile organic compounds (SVOCs).

5. Environmental Analysis

HAZARDS AND HAZARDOUS MATERIALS

Soil gas samples were collected at three locations in the vicinity of the well to assess potential volatile organic compounds (VOC).

Six soil gas probes were installed at approximately 5 feet bgs and 15 feet bgs at the three locations and analyzed by an onsite mobile laboratory for VOCs, methane, and hydrogen sulfide. All soil samples for TPH, SVOCs, and metals were below California Human Health Screening Levels (CHHSLs) and DTSC's action levels for school sites.

One VOC (toluene) was detected at a low concentration in the sample collected from 5 feet bgs. Toluene was reported at 0.05 micrograms per liter ($\mu\text{g/l}$), significantly below the CHHSL of 135 $\mu\text{g/l}$ threshold for residential land use. Methane gas was detected in three samples at low concentrations of 13 parts per million by volume (ppmv), 17 ppmv, and 19 ppmv. The concentrations are significantly below the DTSC's cautionary value of 1,000 ppmv. Hydrogen sulfide was not reported in the soil gas samples.

Human Health Screening Assessment

The PEA included a human health screening assessment to assess whether levels of contaminants in soil at the site could pose a threat to human health under conservative (health-protective) exposure assumptions.

The chemicals of concern (COCs) for the site that were evaluated in the PEA screening risk assessment have been identified based on site history, sampling results, DTSC guidance and protocol, and discussions with the DTSC and toxicologists. Metals were not identified as COCs based on a comparison to background metal concentrations for the area and to CHHSLs and action levels. The one VOC, toluene, that was reported in one soil gas sample was considered to be a COC.

Table 5.7-1 below shows the highest reported soil gas concentration at the site and the corresponding CHHSL.

Table 5.7-1			
Soil Gas Concentrations Detected Onsite Compared to CHHSLs			
Compound	Maximum Detected ($\mu\text{g/l}$)	CHHSL ($\mu\text{g/l}$)	Conc./CHHSL
Toluene	0.05	135	0.00037
Total Risk			3.74×10^{-10}
CHHSL Risk threshold			1.0×10^{-6}

The estimated cancer risk for the site using the maximum detected concentration is 3.74 in 10 billion, significantly below the level of concern of one in a million. The concentration of toluene at the site does not pose a significant health risk to future users of the site under the most conservative assumptions using a residential land use exposure scenario. Based on the analytical and human health screening evaluation results, DTSC determined no further action is required (PEA 2012).

Phase I Environmental Site Assessment

A Phase 1 Environmental Site Assessment was completed for parcels 2 and 3 in March 2012.

5. Environmental Analysis

HAZARDS AND HAZARDOUS MATERIALS

Historic Uses of Site

Past usage of the site was assessed through a review of aerial photographs, topographic maps, and site interviews. The majority of the site has been vacant land since at least 1903. Buildings were not identified either currently or historically for the site.

Site Visit Observations

No structures were observed. No pits, ponds, lagoons, or pools of liquid; no stained soil or pavement; no stressed vegetation; and no solid waste or evidence of waste filling were observed onsite. The project site is not included on any hazardous materials databases.

Roadway Alignments

The search radii for the environmental database searches conducted as part of the 2012 PEA and the 2011 Phase I included the proposed roadway alignments. No hazardous materials sites were listed on or next to any of the roadway alignments proposed as part of the project. Development of the proposed roadways would not create hazards due to accidental release of known existing hazardous materials.

Hazardous material release impacts would be less than significant.

IMPACT 5.7-2: THE PROJECT WOULD NOT BE NEAR A WATER OR FUEL STORAGE TANK OR A PIPELINE THAT CAN POSE A SAFETY HAZARD. [THRESHOLDS HAZ-3 AND HAZ-4]

Impact Analysis: Title 5 CCR, Section 14010 (Standards for School Site Selection) requires that a proposed school site “shall not be located near an above-ground fuel or water storage tank or within 1,500 feet of the easement of an aboveground or underground pipeline that can pose a safety hazard as determined by a risk analysis study, conducted by a competent professional, which may include certification from a local public utility commission.” California Department of Education (CDE) policy states, “any pipeline that has a maximum operating capacity of at least 80 pounds per square inch (psi), including but not limited to those that carry natural gas, liquid petroleum, fuels or hazardous chemicals, shall be included in a pipeline survey, regardless if the pipeline is classified as a transmission or distribution line.”



Storage Tank

Existing Storage Tanks

There is an aboveground water storage tank approximately 110 feet southwest of the southeast corner of the project site (see Figure 5.7-2, *Aboveground Water Storage Tank*). The tank is approximately 97 feet in diameter and approximately 32 feet high, and the volume is approximately 1.8 million gallons.¹ The base of the tank is at an elevation of about 1,884 feet. The tank is near the top of a small ridge that peaks about 75 feet west of the tank at an elevation of about 1,908 feet. In the event of tank failure, water would flow eastward, away from the project site, into Sloan Canyon, then south and downgrade through the canyon. Rupture of this storage tank would not impact the project site. No other aboveground water storage tanks were identified near the project site. Additionally, no aboveground or underground fuel storage tanks were observed during site reconnaissance, and none were identified by the environmental database searches.

¹ If the tank is double-walled the internal volume would be less than reported here.

5. Environmental Analysis

HAZARDS AND HAZARDOUS MATERIALS

Proposed Aboveground Water Storage Tank

The high school project would include grading of a 0.46-acre pad for two aboveground water tanks. The pad would be at the southwest corner of the project site, west of the helipad. Construction of one 750,000-gallon water tank would be included in the project for water to serve the new high school. The second water tank would serve future residential development that is already approved for the surrounding area. Construction of the second tank is not part of the proposed project. The tank pad would be at an elevation of 2,050 amsl.

Tank Construction

The water tank would be constructed and installed in accordance with the latest American Water Works Association's (AWWA's) Welded Carbon Steel Tanks for Water Storage design standards (AWWA, 2011). This standard requires construction of the tank to be able to withstand ground motion from the maximum credible earthquake (i.e., event with a 2% probability of exceedance within a 50-year period, or recurrence interval of 2,500 years). The tank would be designed: 1) to withstand resistance to overturning, 2) to withstand a maximal vertical design acceleration, 3) to maintain a sufficient freeboard to minimize sloshing, 4) to have a mechanically or self-anchored foundation designed to resist anchor bolt uplift and overturning bearing pressure, and 5) to have flexible piping connections to avoid release of the tank contents due to failure of the piping system.

The surface area of the tank pad is approximately 28,800 square feet. The pad would be graded to slope to a 1.25-foot depression in the middle of the pad. A grated catch basin will be located in the center of the depression and will connect to a 12-inch reinforced concrete pipe (RCP), which will drain released water to the helipad to the east.

Failure Modes for Steel Storage Tanks

Failure modes that are known to have occurred to steel storage tanks are summarized below.

Shell Buckling Mode – One of the most common causes of damage in steel tanks, this involves the outward buckling of the bottom shell course, a phenomenon known as “elephant foot”. This has occasionally resulted in the loss of tank contents and, in some cases, total collapse of the tank

Roof and Miscellaneous Steel Damage – A sloshing motion of the tank contents during an earthquake (known as a seiche) can cause upward pressure on the roof for full or nearly full tanks. In past earthquakes, damage has occurred to the joints between the walls and the cone foots, with spillage of tank contents over the top of the wall. Lateral movement and rotation from ground shaking can also result in broken guides, ladders, or other appurtenances attached between the roof and the bottom plate. However, roof damage or broken appurtenances usually do not lead to more than a third of the tank's content loss.

Anchorage Failure – Many steel tanks have hold-down bolts, straps, or chairs that may result in anchor pullout, stretching, or failure during an earthquake. However, failure of an anchor does not necessarily lead to loss of tank contents.

Foundation Failure – Soil failure due to liquefaction, slope instability, or excessive differential settlement as a result of an earthquake can cause severe distortion of the tank bottom and possible loss of contents. And in cases where the tanks are sited on firm foundations, fracture of the baseplate welds has occurred in tanks not restrained or inadequately restrained against uplift.

Hydrostatic Pressure Failure – Tensile hoop stresses can increase due to shaking-induced pressures between the fluid and the tank, leading to splitting and leakage. Although no welded steel tanks have

5. Environmental Analysis

HAZARDS AND HAZARDOUS MATERIALS

actually ruptured, large tensile hoop stresses can contribute to the likelihood of elephant foot buckling near the base of the tank.

Connecting Pipe Failure – One of the more common causes of loss of tank contents during earthquakes is the fracture of piping at connections to the tank. This generally results from large vertical displacements of the tank caused by tank buckling, wall uplift, or foundation failure, but can also occur with horizontal displacement of the tanks. Piping failure can also lead to extensive scour of the foundation materials.

Failure Rates of Tanks during Earthquakes

Evaluations of the seismic performance of 424 on-grade steel tanks during nine earthquakes ranging from the 1933 Long Beach earthquake to the 1994 Northridge earthquake yielded five classifications of damage to tanks: •

- Damage State 1: No damage
- Damage State 2: Damage to roof, minor loss of content, minor shell damage, damage to piping
- Damage State 3: Elephant foot buckling with no leak or minor loss of contents
- Damage State 4: Elephant foot buckling with major loss of content, severe damage
- Damage State 5: Total failure, tank collapse

The peak ground acceleration (PGA) for each earthquake also was reported, and the relationship between PGA and the probability of reaching or exceeding a particular damage state was described. For this analysis, a damage state of 4 or 5 was considered to be relevant for the catastrophic release scenario, because damage states of 1 through 3 would result in leakage that would be released slowly without causing significant flooding.



The upper-bound earthquake for the project site (2% chance of exceedance in 50 years, or 2,475 year average return period) had a PGA of 0.69g. This is slightly higher than the PGA experienced in the 1994 Northridge earthquake (0.63g). The school is not located in an Alquist Priolo fault rupture hazard zone. The nearest active fault is the San Gabriel Fault, which is approximately 1.6 miles from the project site. Using a PGA value of 0.69g, the ALA damage matrix showed that an anchored tank exposed to this peak acceleration would not result in tank failure (i.e., the damage state would be less than 3, resulting in minor damage or loss of contents).

Site-Specific Water Tank Failure Rate

The probability that the NCWD's storage tank would fail catastrophically was calculated. The 2,475 year average return period for an upper-bound earthquake at the site is equivalent to a 4.0×10^{-4} probability of occurring in a given year. Anchored steel water tanks exposed to a PGA associated with the upper-bound earthquake have a 0% probability of severe damage (damage state 4) or total failure (damage state 5). Conservatively assuming that severe damage would result in the loss of the entire contents of the water tank and that there is a 1% probability of this occurring with an upper-bound earthquake, the probability that the water tank would catastrophically fail given that the upper-bound earthquake occurs at the site is predicted to be $4.0 \times 10^{-4} \times 0.01 = 4.0 \times 10^{-6}$, or approximately once every 250,000 years.

Failure Scenario

The catastrophic release scenario for this analysis was assumed to be the shearing off of the tank's inlet/outlet pipe during a maximum credible earthquake as a result of differential movement, resulting in a 12-inch diameter hole at the bottom of the tank. It was then assumed that water would continue to be released from the tank until it was empty.

5. Environmental Analysis

HAZARDS AND HAZARDOUS MATERIALS

Water Tank Flooding Analysis

For this worst-case analysis, it was assumed that the 750,000 gallon storage tank would catastrophically fail as the result of a large earthquake and all of the water in the tank would be released immediately from the bottom of the tank via a 12-inch diameter hole where the inlet/outlet piping was previously attached. This worst-case analysis is conservative for the following reasons:

- No credit was taken for the infiltration of some of the released water into soil of the tank pad
- A catastrophic failure of the storage tank is highly unlikely, since the tank will be recently installed and will meet current seismic standards.

The area around the tank will be graded so that any released water from the tank would drain toward a 1.25-foot depression in the middle of the tank pad. Water would then drain into a catch basin and be conveyed to a 12-inch outlet pipe, which drains to the helipad to the east. The released water will be conveyed around the perimeter of the helipad via a 12-inch RCP or equivalent sized paved swale for eventual release via a paved open trapezoidal downdrain to the detention/evaporation basin. Calculations consisted of the following steps:

- Calculate the released water flow rate from the ruptured water tank. Differential equations were used to calculate flow rate vs. time
- Calculate the detention capacity of the tank pad, based on the grading plan
- Calculate the capacity of the catch basin and 12-inch RCP to convey the water offsite

In the unlikely event that the tank ruptures catastrophically, the peak flow was estimated to be 9.33 cubic feet per second (cfs) and the maximum water depth at the tank pad was estimated to be 0.885 feet, or approximately 10.6 inches. Collected water would then be conveyed to the proposed storm drain system (i.e., catch basin and 12-inch RCP) and discharge to the helipad to the east and eventually via a paved open downdrain to the detention/evaporation pond farther to the east. For this analysis, it was conservatively assumed that the inlet grate to the catch basin was partially (50%) clogged and that the maximum drainage capacity of the catch basin was 7.6 cfs while the actual drainage capacity is much higher when the depth of water is greater than 0.5 foot. Proposed improvements for containing water that could be released due to failure of one or both water tanks are shown in Figure 5.7-3, *Improvements for Containing Water Potentially Released from Water Tanks*.

Based on the analytical results provided above, released water would not reach the school site and no adverse impact is expected to occur for students and staff that occupy the Castaic High School site in the unlikely event that the adjacent 750,000 gallon water tank were to fail catastrophically.

Pipelines

The Office of the State Fire Marshal indicated that no high-pressure pipelines within its jurisdiction are within a 1,500-foot radius of the project site (Phase I 2011). The natural gas pipelines in the project area are only used to supply gas to existing homes. No water lines were identified within 1,500 feet of the project area. No pipeline impacts would occur.

5. Environmental Analysis

HAZARDS AND HAZARDOUS MATERIALS

IMPACT 5.7-3 THE PROJECT INCLUDES A HELIPAD BUT WOULD NOT CREATE SUBSTANTIAL SAFETY HAZARD FOR PEOPLE RESIDING OR WORKING IN THE AREA. [THRESHOLD HAZ-14]

Impact Analysis: The Los Angeles County Fire Department has requested the grading of a pad for a helipad to serve the Castaic area. Construction and operation of the helipad would be the responsibility of the county sheriff. The District has agreed to include a 1.1-acre flat pad at an elevation of 2,010 feet amsl to accommodate the county's request.

The project includes a graded helipad site near the southwest corner of the school site for emergency response and emergency evacuation uses. When the county sheriff has completed the helipad, it would only be used occasionally. Minimum safe altitudes for aircraft operation are prescribed in Federal Code of Regulations Title 14 Section 91.119. Minimum altitudes include 1,000 feet over the highest obstruction in urban areas, and that aircraft may not be operated closer than 500 feet to any person or structure; operations below those altitudes required for takeoff or landing are exempt from the regulation. The nearest proposed school building is about 1,250 feet from the edge of the proposed helipad; the nearest proposed athletic facility to the proposed helipad is a baseball field about 250 feet away. The occasional emergency use of the helipad would not create substantial hazards for people in the area.

IMPACT 5.7-4: THE PROJECT WOULD NOT INTERFERE WITH AN ADOPTED EMERGENCY RESPONSE OR EVACUATION PLAN. [THRESHOLD HAZ-15].

Impact Analysis: The existing emergency response plan in Los Angeles County is the Los Angeles County Operational Area Emergency Response Plan (ERP) approved by the County Board of Supervisors in 1998. The ERP identifies county agencies and other agencies that would be involved in emergency responses, threat summaries and assessments, and procedures for responding agencies, as well as county agencies that would be involved in coordinating and managing responses. The ERP is focused on emergencies beyond the scope of the daily functions of public safety agencies, such as emergencies requiring multi-agency and/or multi-jurisdictional responses.



Further assessments of potential hazards and county resources available for responding to hazards are in the County of Los Angeles All-Hazard Mitigation Plan (AHMP) adopted by the County Board of Supervisors in June 2005. The AHMP includes a vulnerability analysis for many types of hazards, including earthquakes, floods, fires, and man-made hazards including terrorism and civil unrest; goals and objectives for strategies for mitigating hazards; proposed strategies and actions for reducing vulnerability to identified hazards; and lists of facilities and equipment available for responding to disasters.

Project development would have no adverse impact on implementation of the ERP or the AHMP. The Los Angeles County Fire Department would review site plans during project planning and require emergency access and turning radii for firefighting vehicles; number and spacing of fire hydrants; and required fire flow in water mains serving the project.

Additionally, the District has an established emergency response plan for all schools. In an emergency, families of District students are notified through the telephone ConnectedED system. Emergency messages are also posted to the District's website and can be accessed by clicking the "EMERGENCY" button in the upper right-hand corner. The District also has an emergency response process (Standardized Incident Management System [SIM]) and National Emergency Management System [NIMS]), required by the Homeland Security Presidential Directive. This directive ensures a standardized nationwide approach for all governmental agencies to work together. These plans are on the school's website and are sent home in the school newsletter each year.

5. Environmental Analysis

HAZARDS AND HAZARDOUS MATERIALS

IMPACT 5.7-5: THE PROJECT WOULD NOT EXPOSE PEOPLE OR STRUCTURES TO A SIGNIFICANT RISK OF LOSS, INJURY, OR DEATH INVOLVING WILDLAND FIRES. [THRESHOLD HAZ-16]

Impact Analysis: The project site is in a Very High Fire Hazard Severity Zone as designated by the California Department of Forestry and Fire Prevention (CALFIRE 2007).

Fire protection in the project area is provided by Battalion 6 of the LACoFD. The closest fire stations to the site are Fire Station 149 at 31770 Ridge Route in Castaic and Station 76 at 27223 Henry Mayo Drive in Valencia.

Two options for project access roads are proposed, as described in Chapter 4, *Project Description*.

- **Option 1**

- Construction of an access road extending from the existing end of Sloan Canyon Road at the Sloan Canyon Road/Quail Valley Road intersection.
- A second gated, emergency-only route would be created to the south via Romero Canyon Road.

- **Option 2**

- The main access road in Option 2 would be the same as that in Option 1.
- A second public road would also be built beginning at the southern tip of the campus to the existing terminus of Hillcrest Parkway, which is an improved public road. The route follows Romero Canyon Road, Barringer Road, and Sloan Canyon Road to Hillcrest Parkway.

Los Angeles County Fire Department Requirements

LACoFD Prevention Services Bureau submitted a comment letter on the Notice of Preparation for the proposed project on February 27, 2012, with the following requirements for the project. Note that several of the requirements parallel requirements in state laws or regulations but are stricter than the State requirements. In those cases the requirements and recommendations are discussed here. The school district would comply with all LACoFD requirements and recommendations. The School District is currently working with the LACoFD to incorporate the requirements into the project site plan and building plans. Final project site plans and building plans will be submitted to LACoFD for review and approval during final site planning phases.

Requirements

- The project shall contain an emergency helipad. The LACoFD Planning Section will provide the helipad requirements.
- The proposed development may necessitate multiple ingress/egress access for the circulation of traffic and emergency response issues.
- The development of this project must comply with all applicable code and ordinance requirements for construction, access, water mains, fire flows and fire hydrants.

5. Environmental Analysis

HAZARDS AND HAZARDOUS MATERIALS

- This property is located within the area described by the Forester and Fire Warden as a Fire Zone 4, Very High Fire Hazard Severity Zone (VHFHSZ). All applicable fire code and ordinance requirements for construction, access, water mains, fire hydrants, fire flows, brush clearance and fuel modification plans, must be met.
- Access roads shall be maintained with a minimum of 10 feet of brush clearance on each side. Fire access roads shall have an unobstructed vertical clearance clear-to-sky with the exception of protected tree species. Protected tree species overhanging fire access roads shall be maintained to provide a vertical clearance of 13 feet 6 inches.
- Fire hydrant spacing shall be based on fire flow requirements, as outlined in the 2011 County of Los Angeles Fire Code Appendix B. Additional hydrants will be required if hydrant spacing exceeds specified distances.
- Turning radii shall not be less than 32 feet. This measurement shall be determined at the centerline of the road. A Fire Department approved turning area shall be provided for all driveways exceeding 150 feet in-length and at the end of all cui-de-sacs.
- Fire access roads/driveways shall meet the following requirements:
 - On-site driveways must be provided to within 150 feet of all portions of the exterior walls of each building
 - All on-site driveways/roadways shall provide a minimum unobstructed width of 20 feet, clear-to-sky.
 - For streets or driveways with parking restrictions: The entrance to the street/driveway and intermittent spacing distances of 150 feet shall be posted with Fire Department approved signs stating "NO PARKING- FIRE LANE" in three-inch high letters. Driveway labeling is necessary to ensure access for Fire Department use.
 - If parallel parking is provided alongside a fire access road/driveway the lane shall provide the following width:
 - 34 feet if parallel parking is provided on one side of the access road/driveway; parallel parking should not be adjacent to the structure.
 - 42 feet if parallel parking is provided on both sides of the access road/driveway
- All access devices and gates shall comply with California Code of Regulations, Title 19, Articles 3.05 and 3.16.
- The LACoFD Forestry Division administers the County Oak Tree Ordinance. This project has already removed the oak trees indicated on permit #89-213 and there is a written agreement dated October 27, 2011, from Romero Canyon, LLC that states that they will plant the required mitigation trees. If there are any additional oak impacts, a new Oak Tree Report should be submitted to address this issue.

The District would comply with all of the LACoFD requirements specified above. For instance, the site plan includes a graded helipad requested by the LACoFD for the area. The helipad would be built and



5. Environmental Analysis

HAZARDS AND HAZARDOUS MATERIALS

maintained by the LACoFD and would aid in emergency and medical evacuations from the campus. The proposed project involves access road improvements as described in Chapter 4. The project would provide either one or two public road access routes to the school plus a gated emergency access. The District would be responsible for these improvements subject to approval by the county, including the requirements identified in this section. Once completed, the road improvements may be dedicated to the county and the county would be responsible for maintaining the roads; or the roads may be privately maintained

5.7.4 Cumulative Impacts

Existing hazardous materials on project sites are site specific and do not contribute to cumulative impacts. Other related projects would require a hazards assessment in compliance with CEQA. If such hazardous materials are found, remediation to levels established by state and federal agencies would be required before grading or building of those projects would be permitted.

As with the proposed project, other projects would use hazardous materials during both project construction and project operation. Use of hazardous materials by related projects would be governed by existing regulations of several agencies. Wildfire hazards are also required to be mitigated through approvals by the Los Angeles County Fire Department. In consideration of the preceding factors, the project's contribution to cumulative hazards impacts would be rendered less than significant, and therefore project impacts would not be cumulatively considerable.

5.7.5 Existing Regulations and Standard Conditions

State

- California Building Code: California Code of Regulations Title 24, Part 2, Chapter 7A
- California Fire Code
- Los Angeles County Fire Department

5.7.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.7-1, 5.7-2, 5.7-3, 5.7-4, and 5.7-5.

5.7.7 Mitigation Measures

No mitigation measures are required.

5.7.8 Level of Significance after Mitigation

Hazards and hazardous materials impacts would be less than significant.

5. Environmental Analysis

Historic Oil Well Location



Castaic High School Draft EIR

The Planning Center | DC&E • **Figure 5.7-1**

5. *Environmental Analysis*

HAZARDS AND HAZARDOUS MATERIALS

This page intentionally left blank

5. Environmental Analysis

Aboveground Water Storage Tank



Photograph of water tank looking east from southeast part of project site.

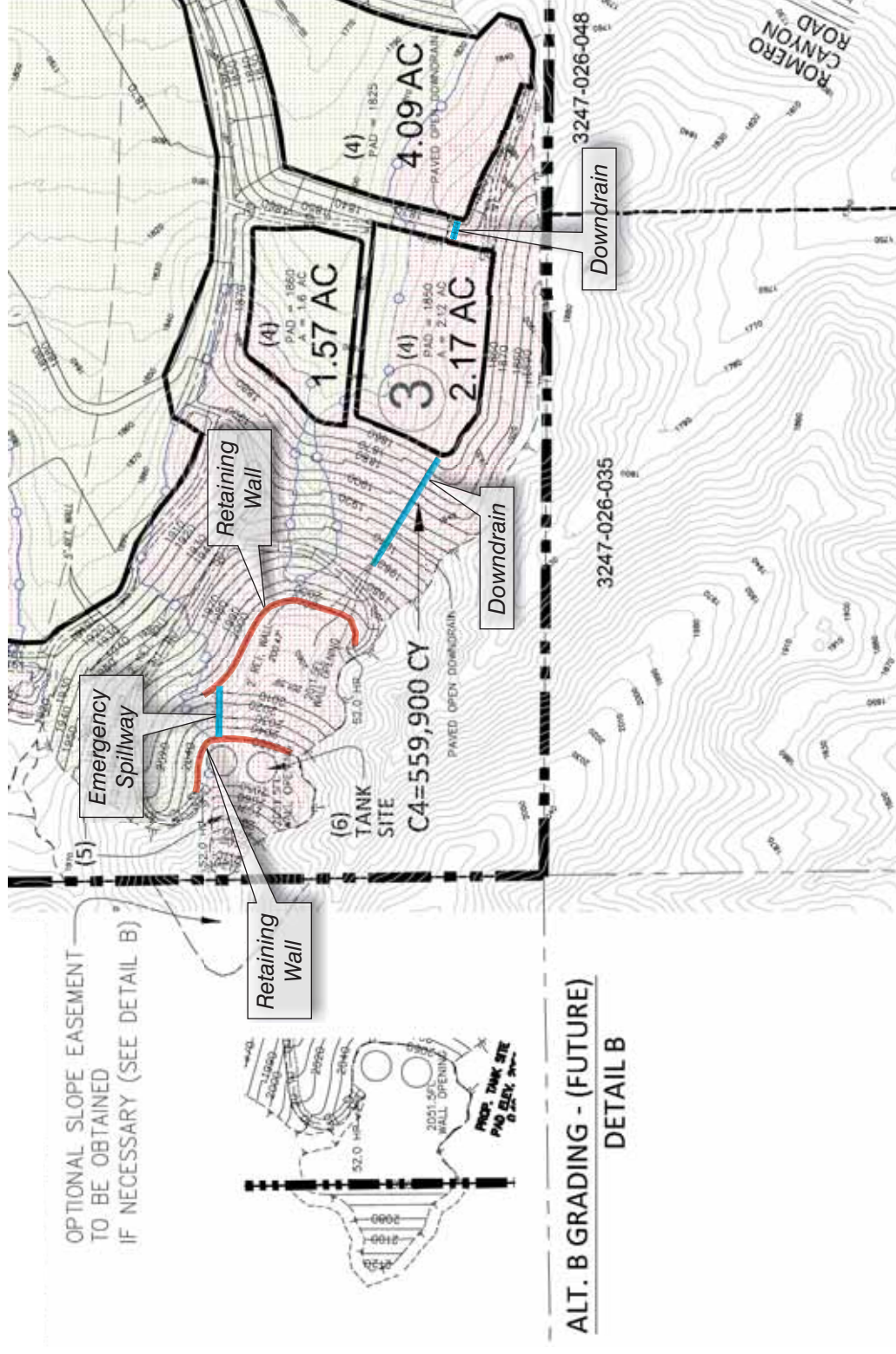
Source: Google Earth 2010

5. *Environmental Analysis*

HAZARDS AND HAZARDOUS MATERIALS

This page intentionally left blank.

Improvements for Containing Water Potentially Released from Water Tanks



Property Boundary

Source: Sikand 2012

Castaic High School Draft EIR



5. *Environmental Analysis*

HAZARDS AND HAZARDOUS MATERIALS

This page intentionally left blank.

5. Environmental Analysis

5.8 HYDROLOGY AND WATER QUALITY

This section of the Draft Environmental Impact Report (EIR) evaluates the potential impacts to hydrology and water quality conditions in the community of Castaic and the surrounding area from implementation of the proposed Castaic High School project. Hydrology deals with the distribution and circulation of water, both on land and underground. Water quality deals with the quality of surface and groundwater. Surface water includes lakes, rivers, streams, and creeks. Groundwater is below the surface of the earth. The analysis presented in this section is based, in part, on the following technical study:

- *Drainage Concept and Hydrology Study for Castaic High School Site (Parcels 1 through 4 of Parcel Map 67132) in the Unincorporated Area of Los Angeles County, Sikand Engineering/Planning/Surveying. May 8, 2012.*

A complete copy of this study is included as Appendix H to this Draft EIR.

All figures are located at the end of this section.

5.8.1 Environmental Setting

Regulatory Framework

Federal, state, and local laws, regulations, plans, or guidelines that are potentially applicable to the project are summarized in this section. They are designed to achieve regional water quality objectives and thereby protect the beneficial uses of the region's surface waters and groundwater.

Federal

Clean Water Act

The federal Water Pollution Control Act, also known as the Clean Water Act (CWA), is the primary statute governing water quality. The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States and gives the Environmental Protection Agency (EPA) the authority to implement pollution control programs, such as setting wastewater standards for industry. The statute's goal is to regulate all discharges into the nation's waters and to restore, maintain, and preserve the integrity of those waters. The CWA sets water quality standards for all contaminants in surface waters and makes it unlawful for any person to discharge any pollutant from a point source into navigable waters unless a permit is obtained under its provisions. The CWA mandates permits for wastewater and stormwater discharges, requires states to establish site-specific water quality standards for navigable bodies of water, and regulates other activities that affect water quality, such as dredging and the filling of wetlands. The CWA also funds the construction of sewage treatment plants and recognizes the need for planning to address nonpoint sources of pollution. The following CWA sections assist in ensuring water quality in surrounding water bodies.

- CWA Section 208 requires the use of best management practices (BMPs) to control discharge of pollutants in stormwater during construction.
- CWA Section 303(d) requires creation of a list of impaired water bodies by states, territories, and authorized tribes; evaluation of lawful activities that may impact impaired water bodies;¹ and preparation of plans to improve the quality of these water bodies. Water bodies on the list do not meet water quality standards, even after point sources of pollution have installed the minimum

¹ Impaired water bodies do not meet, or are not expected to meet, water quality standards.



Environmental Analysis

HYDROLOGY AND WATER QUALITY

required levels of pollution-control technology. CWA Section 303(d) also establishes the Total Maximum Daily Load (TMDL) process to guide the application of water quality standards.

- CWA Section 401 requires any project that needs a federal permit (such as a Section 404 permit) that allows discharge to waters of the US to also obtain state certification that the activity would not violate water quality standards.
- CWA Section 402(p) regulates point-source discharges to surface waters under the National Pollutant Discharge Elimination System (NPDES) permit program, administered by the USEPA. In California, the State Water Resources Control Board (SWRCB) is authorized to oversee the NPDES program through the RWQCBs.
- CWA Section 404 authorizes the US Army Corps of Engineers to require permits for projects that will discharge dredge or fill materials into waters of the US, including wetlands. A Section 404 permit was obtained from the US Army Corps of Engineers in 1992 when the proposed project was an approved residential development.

State

Stormwater Permits

New projects and construction sites are regulated by the SWRCB through general stormwater permits. Cities and counties are regulated through permits issued by the RWQCBs. Since 1990, operators of large storm drain systems, such as the County of Los Angeles, have been required to:

- Develop a stormwater management program designed to prevent harmful pollutants from being dumped or washed by stormwater runoff into the stormwater system prior to discharge into local water bodies
- Obtain an NPDES permit.

The NPDES permit programs in California are administered by the SWRCB and by nine regional boards that issue NPDES permits and enforce regulations within their respective regions. The community of Castaic lies within the jurisdiction of the Los Angeles RWQCB (Region 4), which issues NPDES permits to entities within Los Angeles County.

Municipal discharges of stormwater runoff are regulated under the NPDES General Permit for Municipal Separate Storm Sewer Systems (MS4). The SWRCB issued an MS4 permit (NPDES No. CAS004001) to the Los Angeles County Flood Control District and its copermittees (84 incorporated cities) on December 13, 2001, which was most recently amended on April 14, 2011 by L.A. Superior Court Case No. BS122724. The permit requires the municipalities to develop, implement, and enforce programs (e.g., BMPs, ordinances, or other regulatory mechanisms) to reduce pollutants in stormwater runoff to the county's storm drain system from new development and redevelopment projects for both the construction and operational phases.

The MS4 permit also requires preparation of standard urban stormwater mitigation plans (SUSMPs) and design standards for BMPs. The SUSMP requirements are intended to minimize, to the maximum extent practicable, the discharge of pollutants from new public and private development projects. The design standard is that postconstruction BMPs be designed to mitigate (infiltrate or treat) stormwater runoff from the first 0.75 inch of rainfall prior to its discharge to a storm drain system.

5. Environmental Analysis

HYDROLOGY AND WATER QUALITY

Construction

Construction projects that disturb one acre of land or more are required to control stormwater discharges associated with construction activities under the NPDES General Permit for Construction Activities (GCP). Construction sites that meet this criterion must submit a Notice of Intent (NOI) to file for permit coverage. The SWRCB issued a statewide general NPDES Permit for stormwater discharges from construction sites (NPDES No. CAS000002) in 2001.

Under this permit, applicants are required to develop and implement a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP should contain a site map that shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography before and after construction, and drainage patterns across the project site. The SWPPP must list BMPs that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for “nonvisible” pollutants if there is a failure of the BMPs, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

The project site exceeds one acre and is therefore subject to the stormwater discharge requirements of the GCP. The District must submit an NOI, filing fee, and site map to the SWRCB prior to the commencement of grading and construction activities. Coverage under this permit does not occur until an adequate SWPPP is developed for the project. The SWPPP must be submitted to the County of Los Angeles Department of Public Works and approved by the County Engineer prior to the start of construction. In addition, a Wet Weather Erosion Control Plan (WWECP) must be submitted if the project will leave soil disturbed during the rainy season (October 1 to April 15).

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act (Water Code sections 13000 et seq.) is the basic water quality control law for California. Under this Act, the SWRCB has ultimate control over state water rights and water quality policy. The state is divided into nine regions related to water quality and quantity characteristics. The SWRCB, through its nine RWQCBs carries out the regulation, protection, and administration of water quality in each region. Each regional board is required to adopt a Water Quality Control Plan or Basin Plan that recognizes and reflects the regional differences in existing water quality, the beneficial uses of the region’s ground and surface water, and local water quality conditions and problems.

The community of Castaic is within the jurisdiction of the Los Angeles RWQCB, Region 4, and is located within the Upper Santa Clara River Basin of the Santa Clara River Watershed. The Water Quality Control Plan: Los Angeles Region – Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (Basin Plan) was adopted in 1994 and amended in 2007. This Basin Plan gives direction on the beneficial uses of the state waters within Region 4, describes the water quality that must be maintained to support such uses, and provides programs, projects, and other actions necessary to achieve the standards established in the Basin Plan. The project proponent has obtained a Section 401 Water Quality Certification from the LARWQCB for the previously approved residential project that was planned for the site.

California Fish and Game Code

California Fish and Game Code protects and conserves fish and wildlife resources of the state by requiring that a project proponent notify the California Department of Fish and Game (CDFG) of any proposed alteration of streambeds, rivers, and lakes. This includes rivers and streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support riparian vegetation. If the CDFG determines that a proposed project may substantially adversely affect existing resources, a Lake or Streambed Alteration Agreement will



Environmental Analysis

HYDROLOGY AND WATER QUALITY

be required. The project proponent has obtained a Section 1600 Streambed Alteration Agreement from CDFG for the previously approved residential project on the site.

Local

Los Angeles County

Flood Protection and Drainage Design Standards

In 1986, the Los Angeles County Department of Public Works (LADPW) issued a memorandum entitled *Level of Flood Protection and Drainage Protection Standards* for development projects in Los Angeles County. The memorandum established Los Angeles County policy on levels of flood protection and requires that facilities that intercept flood water from natural drainage courses be designed for the Capital Flood (i.e., 50-year storm event). The project would intercept flood flows from offsite natural areas; therefore, storm drainage facilities will be sized and designed for the capital flood. In addition, all development in the Santa Clara River Watershed must meet standards adopted by the LADPW for the Santa Clara River and its major tributaries in the LA County Sedimentation Manual.

Los Angeles County Stormwater Requirements

Discharges of stormwater and urban runoff from the storm water drainage systems of Los Angeles County are regulated by the LARWQCB's NPDES Permit No. CAS004001. To comply with the permit, the County of Los Angeles requires priority projects to incorporate postconstruction stormwater treatment control BMPs. The proposed school project would be considered a priority project since it will result in the construction of more than 100,000 square feet of impervious surface area.

For all construction sites within Los Angeles County that result in a disturbed area of one acre or more, the LADPW requires the project applicant to submit a Local SWPPP and a WVECP if grading activities will take place during the rainy season. The Local SWPPP must contain general site management BMPs, construction materials and waste management BMPs, and erosion and sediment control BMPs, as well as calculations for the sizing of all temporary drainage devices and sediment basins. The Local SWPPP and the WVECP must be submitted and approved prior to the issuance of grading permits. The WVECP must be revised every year to reflect site conditions and submitted to LADPW by September 1 of each year (i.e., before the start of the rainy season). In addition, the project applicant must submit an NOI and a State SWPPP and obtain a waste discharge identification number from the State Water Resources Control Board.

The LADPW also requires that all priority projects prepare and submit an SUSMP that describes the postconstruction BMPs that will be implemented at the site. The proposed project would be considered a "priority project" because it would involve 100,000 square feet or more of impervious surface. The SUSMP requirements include minimizing postdevelopment peak runoff discharge rates by designing treatment control BMPs that can retain the volume associated with the SUSMP design storm. In addition, the LADPW recently adopted a policy to require new projects to implement low impact design (LID) requirements. Based on preliminary discussions with LADPW staff, it appears that this project would not be subject to the LID requirements because of its designation as a school site.

Community of Castaic

The Castaic Area Community Standards District (CSD) has issued development standards to protect the rural character and natural resources of the Castaic area communities. Standards that may be relevant to the water quality/hydrology aspects of the project include:

5. Environmental Analysis

HYDROLOGY AND WATER QUALITY

- Grading and brushing of 50 percent or greater slopes is prohibited in hillside management areas
- Significant ridgelines must be protected
- Removal of local indigenous vegetation on parcels of 1 acre or greater is prohibited where the removal involves more than 10 percent of the parcel
- Natural creeks must be preserved

Existing Conditions

Climate and Precipitation

The climate of the Los Angeles County is Mediterranean. This climate type is characterized by pronounced seasonal changes in rainfall—with hot, dry summers and cooler, wet winters—but with relatively mild transitions in temperature. The average minimum temperature in Castaic is 45°F in January and the average maximum temperature is 91°F in July. Average annual precipitation for the Castaic area is about 17 inches. Most of the precipitation occurs between the months of December and March. Infrequent storms are capable of releasing large amounts of precipitation in a short period of time.

Watershed and Regional Drainage

A watershed is the geographic area draining into a river system, ocean, or other body of water through a single outlet and includes the receiving waters. Watersheds are usually bordered and separated from other watersheds by mountain ridges or other naturally elevated areas. As rainwater and melting snow run downhill through the watershed, they carry sediment and other materials into receiving bodies of water and groundwater.

The project site lies within the Upper Santa Clara River Watershed, as shown in Figure 5.8-1, *Upper Santa Clara River Watershed*. The Upper Santa Clara River Watershed consists of 786 square miles within Los Angeles County limits. It is a subbasin of the Santa Clara River Watershed, which encompasses 1,634 square miles within Los Angeles County and Ventura County and drains portions of the Los Padres National Forest from the north, the Angeles National Forest from the northeast and east, and the Santa Susana Mountains from the south and southeast. The Santa Clara River flows primarily to the west and eventually drains into the Pacific Ocean south of the City of Ventura. It is one of the few natural river systems remaining in southern California.

Local Surface Waters and Drainage

Tributaries of the Santa Clara River system form the principal surface drainage system in the area. Romero Creek, an intermittent drainage channel, passes through the project site. Romero Creek is part of the Hasley Creek Watershed, which drains an 89.7 square mile area in the west-central part of the Upper Santa Clara River Watershed. Most of the tributary creeks within the watershed are intermittent and only experience surface flow during the winter/wet season or during storm events. This watershed consists of rugged foothill topography with the remainder being the narrow valley floor. The soils in the watershed are primarily characterized as Stonyford-Millsholm Family soils and are in hydrologic soil group “D” (high runoff potential).

The existing drainage pattern for Romero Canyon consists of two natural canyons (Romero Canyon and East Canyon) flowing north to south and intersecting just north of the downstream (south) project site boundary, as shown in Figure 5.8-2, *Existing Site Drainage*. Where drainage outlets the project, the receiving drainage system is the undeveloped Romero Canyon Creek.



Environmental Analysis

HYDROLOGY AND WATER QUALITY

Existing Drainage Flow Rates

The existing drainage of the two canyons is divided into three drainage subareas. Subarea 2A is the school site plus the west slope of West Canyon west of the school site. Subarea 1A is the West Canyon drainage north of the school site, and subarea 3B is the East Canyon drainage north of the school site (see Figure 5.8-3). Drainage flow rates and volumes were calculated for a 50-year, 24-hour storm in burned conditions in two scenarios: clear (stormwater only) and burned (stormwater plus debris including sediment); flow rates and volumes are presented below in Table 5.8-1.

Table 5.8-1		
Existing Drainage Flow Rates and Volumes: Entire 437-Acre Drainage Area		
Condition	Q, cubic feet per second	Volume, acre-feet
50-year Burned	474.0	56.6
50-year Clear	441.6	43.11

Source: Sikand 2012.

Groundwater

The project site is within the Santa Clara River Valley East Groundwater Subbasin, which is part of the Upper Santa Clara River Hydrologic Area (DWR 2003). This groundwater basin is the source of the local groundwater used for water supply in the Santa Clarita Valley. The local groundwater supplies are obtained from surficial alluvial deposits and from the Saugus Formation, which underlies the alluvium. The alluvium and Saugus Formation are underlain by bedrock units consisting of the Pico Formation. These deep bedrock units yield little water and are not considered viable for groundwater development.

The project site is underlain by landslide deposits and bedrock of the Saugus Formation with alluvium in the canyon areas (Fugro, 2010). Although the California Geological Survey (2002) reported historical depths to groundwater of about 10 feet below ground surface (bgs) in the Romero Canyon drainage, geotechnical boreholes advanced at the site to a maximum depth of 70 feet bgs did not encounter groundwater (Fugro, 2010). No public or private groundwater wells were reported within one mile of the project site (CGS, 2002).

Water Quality

Surface Water Quality

As previously discussed, the project site is within the Santa Clara River Watershed. More specifically, runoff from the project site would eventually discharge to Santa Clara River, which ultimately discharges into the Pacific Ocean.

The Basin Plan lists beneficial uses of water bodies within this region (LARWQCB 1994). The tributaries to Santa Clara River within the project area are not specifically designated with beneficial uses in the Basin Plan. However, the tributaries from the project area flow into Reach 5 of the Santa Clara River, which does have beneficial uses assigned to it. The potential and existing beneficial uses for Santa Clara River Reach 5 are:

- MUN – Municipal and domestic water supply – Conditional potential
- IND – Industrial activities that do not depend primarily on water quality – Existing
- PROC – Industrial activities that depend primarily on water quality – Existing
- AGR – Agricultural supply water for farming, horticulture, or ranching
- GWR – Groundwater recharge

5. Environmental Analysis

HYDROLOGY AND WATER QUALITY

- FRSH – Freshwater replenishment
- REC1 –Contact recreation, including swimming, water skiing, wading, or fishing
- REC2 – Non-contact water recreation, including boating, hiking, picnicking, and camping
- WARM – Warm freshwater habitat
- WILD – Wildlife habitat
- RARE – Waters that support rare, threatened, or endangered species and associated habitats
- WET – Wetland ecosystem

Additionally, Reach 5 of the Santa Clara River is a Clean Water Act Section 303(d) listed water body for chloride, coliform bacteria, and iron. Once a water body has been placed on the 303(d) list of impaired waters, states are required to develop a total maximum daily load (TMDL) to address each pollutant causing impairment. A TMDL defines how much of a pollutant a water body can tolerate and still meet water quality standards. The Los Angeles RWQCB has adopted the EPA's approved TMDL for chloride for Reach 5 of the Santa Clara River. The wasteload allocation is 100 mg/l for chloride from both point and nonpoint sources. A TMDL for coliform bacterial is planned to be completed in 2019, and a TMDL for iron in 2021.

Ground Water Quality

The Basin Plan also contains water quality criteria for groundwater. The proposed project is within the Santa Clarita Valley Groundwater Basin, East Subbasin. The existing beneficial use for groundwater in this subbasin for the Saugus Aquifer is MUN: community, military, or individual water supply systems including but not limited to drinking water supply. Local sources of groundwater generally do not have microbial water quality problems (KJC 2008). The mineral content of local groundwater is very “hard”; it has high concentrations of calcium and magnesium (approximately 250 to 600 mg/l). Total dissolved solids (TDS) range from 500 to 900 mg/l. The most notable groundwater quality issue is the detection of perchlorate in four water supply wells in the central part of the basin near the location of the former Whittaker-Bermite facility. These wells have been taken out of service and remain temporarily off-line. No additional detections of perchlorate have been noted in any other municipal wells. No public or private groundwater wells are close to the project site.



Flood Hazards

Designated Flood Zones

Flood hazard zones are areas subject to moderate or minimal flood hazards that are identified on an official Flood Insurance Rate Map (FIRM) issued by the Federal Emergency Management Agency (FEMA). Flooding can be earthquake induced or the result of intense rainfall. Areas within the 100-year floodplain have a 1 percent probability of flooding in a given year. According to FIRM Map No. 06037C0800F, the project site is not within a 100-year flood zone.

Seismically Induced Dam Inundation

Seismically induced inundation refers to flooding that results when water retention structures, such as dams, fail due to an earthquake. Statutes governing dam safety are defined in Division 3 of the California State Water Code (California Department of Water Resources, 1986). These statutes give authority to the California Division of Dam Safety to monitor the structural safety of dams that are greater than 25 feet in dam height or have more than 50 acre-feet in storage capacity. Dams under State jurisdiction are required to have inundation maps that show the potential flood limits in the event that a dam is catastrophically breached. Dam owners are also required to prepare and submit emergency response plans to the State Office of Emergency Services (OES).

Environmental Analysis

HYDROLOGY AND WATER QUALITY

The project site is approximately three miles southwest of Castaic Lake and Dam. Castaic Dam is an earth-filled dam at the confluence of Castaic and Elizabeth Lake Creeks. It has a maximum capacity of 350,000 acre-feet of water, covering a surface area of 2,600 acres. Should a breach in the dam occur, the water will flow south in the Castaic Creek drainage to the Santa Clara River, according to the dam inundation map (OES 2009). Most of the flood water would be east of Interstate 5, and the project site is well outside of the dam inundation area.

Inundation from Aboveground Water Storage Reservoirs

A breach from an aboveground water storage tank or reservoir could result in flooding at the proposed school site. There is an existing water storage tank located approximately 0.25 mile southeast from the project site. However, the water tank is downgrade and downslope from the proposed school and a release from this tank would not result in flooding at the school site.

Tsunamis and Seiches

A tsunami is a series of ocean waves caused by a sudden displacement of the ocean floor, most often due to earthquakes. Due to the project's location approximately 31 miles inland from the Pacific Ocean, the site will not be affected by tsunamis.

Seiches are waves that oscillate in enclosed water bodies, such as reservoirs, lakes, ponds, swimming pools, or semienclosed bodies of water, such as Santa Monica Bay. They may be triggered by moderate or larger earthquakes. It is possible that a seiche could occur at Castaic Lake in the event of a significant earthquake. However, any water that would overtop Castaic Dam would follow the same pathway as shown on the dam inundation map and would not result in any flooding at the proposed school site.

Mudflows and Debris Flows

Mud and debris flows are mass movements of dirt and debris that occur after intense rainfall, earthquakes, and severe wildfires. The speed of the slide depends on the amount of precipitation, steepness of the slope, vibration level, and alternate freezing and thawing of the ground. The project site is hilly and rugged with steep slopes and alluvial-filled canyon bottoms. The area is subject to forest fires and loss of vegetation, which makes it susceptible to debris or mud flows.

5.8.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

HYD-1	Violate any water quality standards or waste discharge requirements.
HYD-2	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).
HYD-3	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in a substantial erosion or siltation on- or off-site.

5. Environmental Analysis

HYDROLOGY AND WATER QUALITY

- HYD-4 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
- HYD-5 Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.
- HYD-6 Otherwise substantially degrade water quality.
- HYD-7 Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- HYD-8 Place within a 100-year flood hazard area structures which would impede or redirect flood flows.
- HYD-9 Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.
- HYD-10 Is the project site subject to flooding or dam inundation?
- HYD-11 Be subject to inundation by seiche, tsunami, or mudflow.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Thresholds HYD-7, HYD-8, and HYD-9

These impacts will not be addressed in the following analysis.

5.8.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.8-1: THE PROPOSED PROJECT WOULD NOT VIOLATE ANY WATER QUALITY STANDARDS OR WASTE DISCHARGE REQUIREMENTS OR OTHERWISE DEGRADE WATER QUALITY. [THRESHOLDS HYD-1 AND HYD-6]

Impact Analysis: Urban runoff resulting from storms or nuisance flows (runoff during dry periods) from development projects can carry pollutants to receiving waters. Runoff can contain pollutants such as oil, fertilizers, pesticides, trash, soil, and animal waste. This runoff can flow directly into local streams or lakes or into storm drains and continue through pipes until it is released untreated into a local waterway and eventually the ocean. Untreated stormwater runoff degrades water quality in surface waters and groundwater and can affect drinking water, human health, and plant and animal habitats. Additionally, increased runoff from urban surfaces can increase the intensity of flooding and erosion.

The construction and operational phases of the proposed project could have the potential to impact water quality. Construction activities may impact water quality due to sheet erosion of exposed soils. The operational phase would alter the existing land uses of the project site and would consequently alter the anticipated and potential pollutant sources at the site. The following is a discussion of the potential impacts that the construction and operational phases of the proposed project could have on water resources and quality.



Environmental Analysis

HYDROLOGY AND WATER QUALITY

Construction Phase

Clearing, grading, excavation, and construction activities associated with the proposed project may impact water quality through sheet erosion of exposed soils and subsequent deposition of particles and pollutants in drainage areas. Grading activities, in particular, lead to exposed areas of loose soil and sediment stockpiles, which are susceptible to uncontrolled sheet flow. The use of materials such as fuels, solvents, and paints also presents a risk to surface water quality due to an increased potential for nonvisible pollutants entering the storm drain system.

If uncontrolled, these materials could lead to water quality impacts such as the discharge of sediment-laden runoff, prohibited nonstorm water discharges, and ultimately the degradation of downstream receiving water bodies. The soil-disturbing activities associated with the proposed project necessitate the implementation of a SWPPP and related construction BMPs, with the best available technology economically achievable and the best conventional pollutant control technology.

Under the Statewide General Construction NPDES Permit No. CAS000002, the District is required to submit an NOI to the SWRCB prior to the commencement of construction activities. In addition, a SWPPP must be prepared and implemented at the project site, and revised as necessary as administrative or physical conditions change. In addition, the District must submit a local SWPPP and a WVECP to Los Angeles County Department of Public Works prior to the issuance of grading permits. The SWPPP describes the BMPs to be implemented during the project's construction activities. SWPPPs now include a postconstruction requirement to design facilities to capture and treat 80 percent of the stormwater at the site before it is allowed to flow into the storm drain system and/or capture and treat the first 0.75 inch of rainfall before it is discharged into the stormwater system. Construction contractors are required to maintain a copy of the SWPPP at the site at all times and implement all construction BMPs identified in the SWPPP during construction activities. The general categories of construction BMPs are outlined in Table 5.8-2.

The SWPPP is required to identify construction BMPs necessary to mitigate project impacts, including but not limited to:

- Sediment from areas disturbed by construction shall be retained onsite using structural controls (erosion and sediment controls) and sediment debris basins (first flush basin will serve this function during construction activities) to the maximum extent practicable. Streets adjacent to the site entrance and exits shall be free of sediment and debris from the project site and shall be swept frequently.
- Stockpiles of soil shall be properly contained to minimize sediment transport from the site to streets, drainage facilities, or adjacent properties via runoff, vehicle tracking, wind, or water.
- Appropriate BMPs for construction-related materials, wastes, and spills shall be implemented to minimize transport from the site to streets, drainage facilities, or adjoining properties by wind or runoff.

5. Environmental Analysis

HYDROLOGY AND WATER QUALITY

**Table 5.8-2
Construction BMPs**

<i>Category</i>	<i>Description</i>			
Erosion Controls	EC-1	Construction Scheduling	EC-8	Wood Mulching
	EC-2	Preservation of Existing Vegetation	EC-9	Earth Dikes and Swales
	EC-3	Hydraulic Mulch	EC-10	Velocity Dissipation Devices
	EC-4	Hydroseeding	EC-11	Slope Drains
	EC-5	Soil Binders	EC-12	Streambank Stabilization
	EC-6	Straw Mulch	EC-13	Polyacrylamide
	EC-7	Geotextiles and Mats		
Sediment Controls	SE-1	Silt Fence	SE-7	Street Sweeping
	SE-2	Desilting Basin	SE-8	Sandbag Barrier
	SE-3	Sediment Trap	SE-9	Straw Bale Barrier
	SE-4	Check Dam	SE-10	Chemical Treatment
	SE-5	Fiber Rolls	SE-11	Chemical Treatment
	SE-6	Gravel Bag Berm		
Wind Erosion Controls	WE-1	Wind Erosion Control		
Tracking Controls	TC-1	Stabilized Construction Entrance/Exit		
	TC-2	Stabilized Construction Roadway		
	TC-3	Entrance/Outlet Tire Wash		
NonStorm Water Management Controls	NS-1	Water Conservation Practices	NS-9	Vehicle and Equipment Fueling
	NS-2	Dewatering Operations	NS-10	Vehicle and Equipment Maint.
	NS-3	Paving and Grinding Operations	NS-11	Pile Driving Operations
	NS-4	Temporary Stream Crossing	NS-12	Concrete Curing
	NS-5	Clear Water Diversion	NS-13	Concrete Finishing
	NS-6	IC/ID Detection and Reporting	NS-14	Material Use Over Water
	NS-7	Potable Water/Irrigation	NS-15	Demolition Over Water
	NS-8	Vehicle and Equipment Cleaning	NS-16	Temporary Batch Plants
Waste Management and Controls (i.e., good housekeeping practices)	WM-1	Material Delivery and Storage	WM-6	Hazardous Waste
	WM-2	Material Use	WM-7	Contaminated Soil
	WM-3	Stockpile Management	WM-8	Concrete Waste
	WM-4	Spill Prevention and Control	WM-9	Sanitary / Septic Waste
	WM-5	Solid Waste Management		

Source: CASQA 2003.



- Runoff from equipment and vehicle washing shall be contained at construction sites unless treated to reduce or remove sediment and other pollutants.
- All construction contractor and subcontractor personnel are to be made aware of the required BMPs and good housekeeping measures for the project site and any associated construction staging areas.
- At the end of each day of construction activity, all construction debris and waste materials shall be collected and properly disposed of in trash or recycle bins.
- Construction sites shall be maintained in such a condition that an anticipated storm does not carry wastes or pollutants offsite. Discharges of material other than stormwater can occur only when necessary for performance and completion of construction practices and where they do not cause or contribute to a violation of any water quality standard; cause or threaten to cause pollution, contamination, or nuisance; or contain a hazardous substance in a quantity reportable under federal regulations (Title 40 Code of Federal Regulation [CFR], Parts 117 and 302).

Environmental Analysis

HYDROLOGY AND WATER QUALITY

- Potential pollutants include but are not limited to solid or liquid chemical spills; wastes from paints, stains, sealants, glues, limes, pesticides, herbicides, wood preservatives, and solvents; asbestos fibers, paint flakes, or stucco fragments; fuels, oils, lubricants, and hydraulic, radiator, or battery fluids; fertilizers, vehicle/equipment and concrete wash water; concrete, detergent, or floatable wastes; wastes from any engine/equipment steam cleaning or chemical degreasing; and superchlorinated potable water line flushing. During construction, the permittee shall dispose of such materials in a specified and controlled temporary area onsite, physically separated from potential stormwater runoff, with ultimate disposal in accordance with local, state, and federal requirements.
- Dewatering of contaminated groundwater or discharging contaminated soils via surface erosion is prohibited. Dewatering of noncontaminated groundwater requires a NPDES permit from the local RWQCB.
- The permittee and contractor shall inspect the erosion control work to ensure that it is in accordance with the approved plans.
- The permittee shall notify all general contractors, subcontractors, material suppliers, lessees, and property owners that dumping of chemicals into the storm drain system is prohibited.
- Equipment and workers for emergency work shall be made available at all times during the rainy season. Necessary materials shall be available onsite and stockpiled at convenient locations to facilitate rapid construction of temporary devices when rain is imminent.

Submittal of an NOI and implementation of the SWPPP and its associated BMPs throughout the construction phase of the proposed project would address anticipated and expected pollutants of concern as a result of construction activities. The proposed project would comply with all applicable water quality standards and waste discharge requirements.

Operational Phase

The operational phase of the proposed project could result in long-term impacts to the quality of stormwater and urban runoff, subsequently impacting downstream receiving waters. Development projects can alter the existing drainage course and can potentially create new sources of runoff contamination. Consequently, the proposed project has the potential to increase postconstruction loading of certain pollutants.

As proposed, the project stormwater would discharge into the Romero Canyon Creek and ultimately into the Santa Clara River. The long-term operation of the proposed project necessitates the implementation of postconstruction or operational BMPs to the extent practicable to mitigate and abate pollutants that may compromise the beneficial uses and water quality of affected water bodies. Such postconstruction/operational BMPs for the proposed project would be specified in the SUSMP that would be prepared for the proposed project and are discussed below.

Pollutants of Concern

As a result of the proposed alteration of existing site conditions, the proposed project would create new pollutant sources, changing the makeup of pollutant constituents generated by the proposed land uses. Because stormwater runoff pollution is diffuse in nature, the composition, level, and cumulative effects of specific pollutants generated by the proposed project cannot be appropriately quantified. However, based on

5. Environmental Analysis

HYDROLOGY AND WATER QUALITY

the proposed land uses, the pollutants generally associated with the project's postconstruction operations can be predicted.

Primary pollutants of concern are those that have been identified as causing impairment of receiving waters. Table 5.8-3 summarizes the categories of land use or project features of concern and the general pollutant categories associated with them. (Note that school facilities are not specifically included in Table 2-1 of the *California Stormwater BMP Handbook - New Development and Redevelopment* and the commercial development pollutant category is used as it represents the most similar land use.) Without controls, the project could contribute bacteria and nutrients, which are listed 303(d) pollutants for the receiving waters of the Santa Clara River, and therefore would be considered primary pollutants of concern. The other pollutants are considered to be secondary pollutants of concern.

Table 5.8-3
Potential Pollutants Created by Land Use Type

Priority Pollutant Category	General Pollutant Categories								
	Pathogens	Heavy Metals	Nutrients	Pesticides	Organic Compounds	Sediments	Trash & Debris	Oxygen-Demanding Substances	Oil & Grease
Commercial/Industrial Development > 100,000 sf	p ³		p ¹	p ⁵	p ²	p ¹	E	p ⁵	E
Parking Lots		E	p ¹	p ²		p ¹	E	p ⁵	E
Streets, Highways, & Freeways		E	p ¹		E ⁴	E	E	p ⁵	E

Source: Table 2-1, CASQA January 2003.

E = Expected P = Potential

¹ A potential pollutant if landscaping or open areas exist.

² A potential pollutant if the project includes uncovered parking areas.

³ A potential pollutant if land use involves food or animal waste products.

⁴ Including petroleum hydrocarbons.

⁵ Including solvents.

Since the proposed project meets the definition of a "priority project" and is subject to SUSMP requirements, the District would be required to submit a SUSMP for review to the LADPW Building and Safety Division prior to the issuance of grading plans. The SUSMP would describe site design/source control BMPs and treatment control BMPs that would be used to reduce or avoid potential water quality impacts to the maximum extent practicable. Site design, source control, and treatment control BMPs that are being considered for the proposed project are discussed below. The project would not be required to meet Los Angeles County's new low impact design requirements due to its designation as a school.

Site Design BMPs

Site design BMPs would be incorporated into the project's design to reduce the potential impacts on surface and groundwater quality. These include, but are not limited to, maximizing pervious areas, minimizing directly connected impervious areas, constructing hardscape with permeable materials, and implementing hydrologically functional landscape design. Specific details and guidelines for the implementation of site design BMPs are provided in the Los Angeles County SUSMP Manual (2002). The proposed project would incorporate the following site design BMPs, as feasible:



Environmental Analysis

HYDROLOGY AND WATER QUALITY

Minimize Impervious Footprint

- Construct walkways, trails, patios, overflow parking areas with permeable surfaces
- Minimize the use of impervious surfaces, such as decorative concrete, in the landscape design
- Construct streets, sidewalks, and parking lot aisles to the minimum widths
- Minimize soil compaction
- Use pervious materials in parking areas

Conserve Natural Areas

- Concentrate development on the least environmentally sensitive portions of the site while retaining the remaining land in a natural, undisturbed condition
- Use natural drainage systems and channels to the maximum extent
- Maximize canopy interception and water conservation by preserving existing native trees and shrubs, and planting additional native or drought tolerant trees and large shrubs

Minimize Directly Connected Impervious Areas

- Drain rooftops into adjacent landscaping prior to discharge to the storm drain system
- Drain impervious parking lots into landscaped areas
- Drain sidewalks, walkways, trails, and patios into adjacent landscaping

Maximize Canopy Interception and Water Conservation

- Preserve existing native trees and shrubs
- Plant additional native or drought-tolerant trees or large shrubs in place of non-drought-tolerant exotic plants

Slope and Channel Protection

- Minimize disturbance to natural drainage systems to the maximum extent practicable
- Convey runoff safely from the tops of slopes
- Plant native or drought tolerant vegetation on slopes
- Control and treat flows in landscaping or other controls prior to reaching existing natural drainage channels
- Stabilize permanent channel crossings
- Install energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels

Source Control BMPs

Source control BMPs effectively minimize the potential for typical urban pollutants to come into contact with stormwater, thereby limiting water quality impacts downstream. A variety of source control BMPs would be

5. Environmental Analysis

HYDROLOGY AND WATER QUALITY

incorporated into the proposed project and implemented throughout the operation of the school, including the following:

- Design outdoor material storage areas by placing materials in an enclosure, providing secondary containment, paving the storage area, and providing a roof or awning to prevent contact with rainwater
- Design trash storage areas with paved, impervious surfaces; provide screening or walls to prevent offsite transport of trash; have attached lids on all trash containers, and place containers under a roof or awning
- Use efficient irrigation systems and landscape design, including rain shutoff devices or flow reducers/shutoff valves, to conserve water and control water losses from broken sprinkler heads
- Provide storm drain stenciling or signage on all storm drain inlets and catch basins with highly visible source control messages (e.g., “no dumping—drains to ocean”)
- Conduct street sweeping of all onsite roads, as necessary, to reduce or prevent sediment and debris from entering receiving waters and prior to the rainy season
- Provide routine maintenance of all catch basins, grate inlets, etc., for debris and litter removal
- Provide litter control for the entire project site, including trash pickup and sweeping of littered common areas
- Use effective landscape management techniques that includes minimizing fertilizer and pesticide application and providing proper education and training for landscaping/maintenance workers
- Provide hillside areas disturbed by project development with deep-rooted, drought tolerant plant species selected for erosion control and provide temporary or permanent irrigation, as needed



Treatment Control BMPs

In addition to site design and source control BMPs, the proposed project requires treatment control BMPs (single or in combination) to remove anticipated pollutants of concern from onsite runoff. Treatment-control BMPs can range from natural treatment systems such as vegetated swales, detention basins, and constructed wetlands, to proprietary control measures. Considering that no single treatment BMP can effectively remove all contaminants that can pollute stormwater runoff, the treatment control BMP(s) proposed for the proposed project would be high to moderately efficient in removing the target pollutants. Table 5.8-4 demonstrates pollutant-removal efficiencies of several treatment control BMPs.

Environmental Analysis

HYDROLOGY AND WATER QUALITY

**Table 5.8-4
Treatment Control BMP Selection Matrix**

<i>Pollutant of Concern</i>	<i>Treatment Control BMP Categories</i>						
	<i>Vegetated Swale</i>	<i>Extended Detention Basins</i>	<i>Infiltration Basins</i>	<i>Constructed Wetlands</i>	<i>Bioretention</i>	<i>Media Filtration</i>	<i>Trash Racks & Hydrodynamic Devices</i>
Sediment	M	M	H	H	H	H	M
Nutrients	L	L	H	M	M	L	L
Trash	L	H	H	H	H	H	H
Trace Metals	M	M	H	H	H	H	L
Bacteria	L	M	H	H	H	M	L
Oil & Grease	M	M	H	H	H	H	M
Organics	M	M	H	H	H	H	L

Source: CASQA 2003.

Notes:

L: Low removal efficiency

M: Medium removal efficiency

H: High removal efficiency

Priority projects are required to select a single or combination of treatment-control BMPs from Table 5.8-4 that maximizes pollutant removal for the primary pollutants of concern. Moreover, the treatment control BMPs selected for the proposed project would be required to mitigate (infiltrate or treat) either volumetric or flow-based stormwater runoff.

Volumetric treatment control BMPs would mitigate a specific volume of runoff from the project site, equal to one of the following:

- The volume of runoff produced from a 24-hour, 85th percentile storm event, as determined from hydrologic maps contained in the County of Los Angeles Hydrology Manual
- The volume of runoff produced by the 24-hour, 85th percentile runoff event, determined as the maximized capture urban runoff volume for the area, from the formula recommended in the Urban Runoff Quality Management, Water Environment Federation Manual of Practice No. 23/ American Society of Civil Engineers Manual of Practice No. 87 (1998)
- The volume of annual runoff based on unit basin storage volume, to achieve 90 percent or more volume treatment by the method recommended in the California Stormwater Best Management Practices Handbook – Industrial/Commercial (2003)
- The volume of runoff as determined by the local historical rainfall record that achieves the same reduction in pollutant loads and flows as achieved by the mitigation of the 85th percentile 24-hour runoff event

Flow-based treatment control BMPs would mitigate a specific flow of runoff from the project site, equal to one of the following:

5. Environmental Analysis

HYDROLOGY AND WATER QUALITY

- The maximum flow rate of runoff produced from a rainfall intensity of 0.2 inches per hour for each hour of a storm event
- The maximum flow rate of runoff produced by the 85th percentile hourly rainfall intensity, as determined from the local historical rainfall record, multiplied by a factor of two for each hour of the storm event
- The maximum flow rate of runoff, as determined from the local historical rainfall record, that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 85th percentile hourly rainfall intensity multiplied by a factor of two for each hour of storm event

Retention Basins and Evaporation Basins

The project drainage concept includes four evaporation basins and two retention basins, described further below under Impact 5.8-4 and shown on Figure 4-8, *Campus Drainage Plan*. The six basins together would have capacity to limit drainage volume from a 50-year, 24-hour storm from the school site in postproject conditions to no greater than existing conditions. Estimated drainage volumes from the project drainage area in existing and postproject conditions are listed below in Table 5.8-5.

Collectively, site design, source, and treatment control project design features would address the anticipated and expected pollutants of concern from the operational phase of the proposed project. Additionally, the proposed project would comply with all applicable rules and regulations to reduce non-stormwater discharges by designing, constructing, and operating to ensure the preservation of water quality. Strict compliance with applicable mandatory stormwater and permit requirements would ensure that no water quality standards or discharge requirements are violated.

Compliance with all applicable rules and regulations, including the provisions of the NPDES General Permit and preparation and implementation of the SWPPP and SUSMP, would reduce construction and postconstruction impacts to water quality to a less than substantial impact.

IMPACT 5.8-2: THE PROPOSED PROJECT WOULD NOT ADVERSELY IMPACT GROUNDWATER QUALITY, SUBSTANTIALLY DEplete GROUNDWATER SUPPLIES, OR INTERFERE SUBSTANTIALLY WITH GROUNDWATER RECHARGE. [THRESHOLDS HYD-1 AND HYD-2]

Impact Analysis: Groundwater recharge may be reduced if areas currently available for the infiltration of rainfall runoff are reduced and permeable areas located above groundwater basins are replaced by impermeable surfaces (paving, buildings, etc.). Project implementation would involve the creation of new impervious surfaces, which generally result in a reduction in the amount of rainwater that would infiltrate the soil to the groundwater table.

The project site is located within the Santa Clara River Valley East Groundwater Subbasin, which includes an Alluvial Aquifer and a deeper Saugus Aquifer. However, borings advanced at the site did not encounter groundwater to a maximum depth of 70 feet bgs. In addition, there are no public or private groundwater wells located within a mile of the site. Therefore, groundwater extraction in this area is limited.

Although the project would include the development of impermeable surfaces, such as buildings, concrete hardscape areas, parking lots, and access roads, which would cover approximately 46 acres, more than half of the site would remain unpaved. In addition, the project would include four on-site evaporation basins and two onsite retention basins that would result in the infiltration of stormwater runoff into the underlying soil and thereby reduce impacts to groundwater recharge. Although development of the project could nevertheless



Environmental Analysis

HYDROLOGY AND WATER QUALITY

result in a small incremental reduction in groundwater recharge, this impact is considered to be less than significant.

Grading and cut-and-fill activities during construction at the site should not encounter groundwater. Therefore, dewatering would not be involved, and the quality of groundwater would not be impacted. Additionally, the District would be required to comply with an MS4 permit and adhere to standard BMPs designed to prevent erosion and siltation during the project's construction phase; impacts to surface water bodies and to groundwater would be less than significant. Development of the proposed project would not directly or indirectly degrade groundwater quality, and impacts to groundwater quality would be less than significant.

IMPACT 5.8-3: WHILE THE PROJECT WOULD CHANGE THE DRAINAGE PATTERN OF THE SITE, THE PROJECT WOULD NOT RESULT IN SUBSTANTIAL EROSION OR SILTATION ON- OR OFFSITE. [THRESHOLD HYD-3]

Impact Analysis: Most of the potential erosion and siltation impacts would occur during the construction phase (e.g., grading, clearing, excavating, and cut and fill activities) of the proposed project. During construction, the project site would be cleared of vegetation in preparation for grading, which would expose loose soil to potential wind and water erosion. If not controlled, the transport of these materials to local waterways would temporarily increase suspended sediment concentrations and release pollutants attached to sediment particles into local waterways. The estimated amount of grading to be done for the school site and related engineered slopes and landslide removals is 4,887,010 cubic yards (cy) of cut and 4,890,700 cy of fill. The estimated grading amounts for construction of the access roads is 1,630,050 cy of cut and 347,840 cy of fill.

Proposed Water Quality Features

As previously stated, the project would be required to submit an NOI and SWPPP prior to the commencement of construction activities. The SWPPP would describe the BMPs to be implemented during the project's construction activities; such BMPs are discussed in detail above under Impact 5.8-1.

In addition, a WVECP would be submitted to Los Angeles County that documents measures to minimize the loss of soil materials from the project site during the rainy season.

The operational phase of the project would contain a number of features to reduce the impact of erosion and siltation. The site design, source control, and treatment control BMPs for the operational phase would be outlined in the project's SUSMP and are discussed above under Impact 5.8-1. The project would incorporate the plans as described herein and comply with regulations protecting water quality. Water quality impacts would be less than significant.

IMPACT 5.8-4: THE PROPOSED PROJECT WOULD NOT SUBSTANTIALLY INCREASE THE RATE OR AMOUNT OF SURFACE RUNOFF SO THAT IT WOULD RESULT IN FLOODING ON- OR OFFSITE, OR CREATE RUNOFF WATER THAT WOULD EXCEED THE CAPACITIES OF EXISTING OR PLANNED STORMWATER DRAINAGE SYSTEMS. [THRESHOLDS HYD-4 AND HYD-5]

Impact Analysis: Development of the project would permanently alter the existing drainage patterns on the site, which could result in increased runoff. Potential impacts associated with increased runoff include the potential to exceed the capacity of stormwater conveyance systems, causing erosion problems and resulting

5. Environmental Analysis

HYDROLOGY AND WATER QUALITY

in on- or offsite flooding. Increased runoff results from an increase in the impervious areas at the site or changes in land use that alter the direction of flow.

The proposed project would use BMPs and comply with the Los Angeles County SUSMP requirements. Proposed storm drains, area drains, and detention and retention basins are described below. The estimated amount of debris that would be entrained in stormwater in the drainage area resulting from a 50-year storm would decrease from 27,313 cubic yards (cy) in existing conditions to 18,904 cy in postproject conditions.

Proposed Onsite Drainage

Stormwater on the campus would drain into three area drains: one in the northeast part of the building area, one in the southeast part of the building area; and one between the junior varsity baseball field and one of the soccer fields west of the building area (see Figure 4-8, *Campus Drainage Plan*). Underground storm drains would connect the northern and western area drains to the southeastern area drain and onward to a detention and retention basin in the southeast part of the site.

Drainage Flow Rates and Volumes at Project Completion

Development of the school would add 46 acres of impervious surfaces to the site and would thus increase runoff rates and volumes onsite. Runoff rates and volumes in existing and postproject conditions are compared below in Table 5.8-5.

Table 5.8-5						
Drainage Flow Rates and Volumes: Existing and Postproject Conditions						
(Entire drainage area)						
Condition	Q, cubic feet per second			Volume, acre-feet		
	Existing	Project Completion	Net increase	Existing	Project Completion	Net increase
50-year Burned	474.0	536.4	62.4	56.6	66.63	10.03
50-year Clear	441.6	515.6	74	43.11	57.97	14.86

Source: Sikand 2012.



Detention and Retention Areas and Basins

The project would include detention and retention areas to limit postproject drainage flows and volumes to their existing values, in compliance with Los Angeles County requirements. Detention is temporary containment of stormwater followed by controlled release of water into a downstream drainage facility or stream. Retention involves removal of stormwater from a basin by evaporation, infiltration into the soil, or pumps; it does not involve discharge to a downstream drainage facility.

The total volume needed for the detention and retention areas is the net increase in drainage volume in the 50-year clear condition, that is, 14.86 acre-feet. The net increase in flow rate that must be detained by proposed drainage facilities so that postproject drainage flow rates would be no greater than existing rates is 74 cfs, that occurring in the 50-year clear condition. The total volume of the drainage area in postproject conditions would increase to 444 acres, or about 1.5 percent larger than the 437 acres in existing conditions.

Proposed detention and retention facilities are listed in Table 5.8-6; the locations of the facilities are shown on Figure 4-8.

Environmental Analysis

HYDROLOGY AND WATER QUALITY

Table 5.8-6
Proposed Detention and Retention Areas

Designation and Type of Facility	Location Onsite	Area, acres	Depth	Volume, acre-feet
A1 Evaporation Basin	South part of site	4.59	10 inches	3.825
A2 Evaporation Basin	Southeast part of site	8.19	10 inches	6.825
B1 Retention Basin	North part of site	0.51	5 feet	2.55
B2 Retention Basin	Southeast part of site	0.58	5 feet	2.9
C1 Evaporation Basin	Northwest part of site	2.66	10 inches	2.22
C2 Evaporation Basin	West part of site	1.31	10 inches	1.09
Total	Not applicable	17.84	Not applicable	19.41

Source: Sikand 2012.

The six retention basins and evaporation basins together would limit postproject drainage flow rates and volumes to no more than existing conditions. Retention Basin B2 would be excavated within Evaporation Basin A2.

Retention Basin B2 would have an overflow pipe discharging southward into an engineered swale along the west side of Valley Creek Road that in turn would discharge into Romero Canyon. Evaporation Basin A2 also would have an overflow pipe discharging into the same swale. None of the other retention or evaporation basins would have overflow pipes discharging to downstream drainages.

Drainage from Engineered Slopes in Northeast Part of Site

A swale outlet would convey drainage from engineered slopes along the northeast site boundary eastward along the north side of Canyon Hill Road to a proposed arch culvert about 600 feet east of Valley Creek Road. The south end of the culvert would discharge into the natural drainage in Sloan Canyon (see Figure 5.8-3, *Proposed Drainage Plan for Slopes Next to Northeast Campus Boundary*).

Proposed Drainage Facilities around School Campus

Drainage from Romero Canyon and East Canyon upstream of the school site would be directed into a proposed swale and drainage channel along the north and east sides of Valley Creek Road – that is, the sides opposite the campus.

The proposed drainage channel and swale would discharge into a proposed reinforced concrete box (RCB) culvert about 360 feet south of the intersection of Valley Creek Road and Driveway 4, shown on Figure 5.8-7. The culvert would have a six-foot-square cross-section, would be about 440 feet long, and would pass under Valley Creek Road and discharge into an engineered swale just west of Valley Creek Road. To reduce the stormwater discharge rate into the swale, a grouted rip-rap energy dissipator would be installed at the outlet of the culvert. The swale would continue southward till it would discharge into the existing Romero Canyon natural drainage at the school site boundary. The natural watercourse of East Canyon would be retained in a 370-foot-long engineered swale at the south site boundary.

Valley Creek Road Crossing over East Canyon

Valley Creek Road would bridge East Canyon natural drainage channel about 300 feet north of the south site boundary. Three options are proposed for conveying the East Canyon drainage under Valley Creek Road: 1) a bridge about 25 feet long; 2) a concrete arch culvert; or 3) a reinforced concrete pipe (RCP) culvert. Two examples of concrete arch culverts are shown in Figure 5.8-4, *Concrete Arch Culvert*. Immediately south of

5. Environmental Analysis

HYDROLOGY AND WATER QUALITY

the end of the engineered swale, Valley Creek Road would bridge a channel connecting the swale to Romero Canyon; the bridge would be about 15 feet long. Proposed drainage improvements near Valley Creek Road in the southeast part of the project site are shown in Figure 5.8-5, *Proposed Drainage Improvements, Southeast Part of Project Site*.

Valley Creek Road would be rerouted about 25 feet west of the current alignment of Romero Canyon Road, starting about 200 feet south of the site boundary and extending south to the intersection with Baringer Road. Roadway protection to reduce erosion along the east side of Valley Creek Road would be installed underground for approximately 600 feet, starting 500 feet south of the site boundary and extending north. Four optional designs are being considered for roadway protection: one of concrete; one of shotcrete (concrete sprayed through a hose); welded wire and rock revetment; or soil cement (natural soil mixed with a small amount of portland cement and water). The four options for road protection are shown in Figure 5.8-6.

Baringer Road Crossing over Romero Canyon

Baringer Road would intersect with Valley Creek Road at a 90-degree knuckle intersection. Two options are proposed for this intersection. Option 1 would locate the intersection about 400 feet south of the south site boundary. Baringer Road would bridge the Romero Canyon natural drainage; the bridge would be about 105 feet long.

In Option 2 the west end of Baringer Road would be shifted south about 95 feet. Baringer Road would cross Romero Canyon with a 50-foot-long bridge or a concrete arch culvert. Options 1 and 2 are shown in Figures 5.8-7 and 5.8-8, respectively.

Baringer Road and Sloan Canyon Road Crossings over Sloan Canyon

Three options are under consideration for the intersection of Baringer Road with Sloan Canyon Road along the southern access route. Option 1 includes construction of two roads on the existing rights-of-way. Baringer Road crosses Sloan Canyon just west of the intersection, and Sloan Canyon Road crosses Sloan Canyon just south of that intersection. Sloan Canyon would pass under each roadway in a culvert in this option.

Options 2A and 2B would construct Baringer Road and Sloan Canyon Road, connecting through a curve west of Sloan Canyon; a side road from Sloan Canyon Road would be built in these options to provide access from Baringer Road to and from Sloan Canyon Road to the north. In options 2A and 2B Sloan Canyon would pass under Sloan Canyon Road in a culvert; the side road would pass over Sloan Canyon via a bridge about 80 feet long. Drainage options for the intersection of Baringer Road with Sloan Canyon Road are shown in Figure 5.8-9, *Drainage Options: Intersection of Baringer Road with Sloan Canyon Road*.

Summary

The project provides for drainage facilities for the proposed school site, for engineered slopes next to the school site, and for conveying drainage from upstream of the site around the school site. The drainage facilities would be adequate for stormwater from a 50-year storm, and no substantial flood risk would result.

IMPACT 5.8-5: THE PROPOSED PROJECT WOULD NOT SUBSTANTIALLY DEGRADE OVERALL WATER QUALITY. [THRESHOLD HYD-6]

Impact Analysis: Pollutants commonly associated with construction sites that can impact stormwater are sediments, nutrients, trace metals, pesticides, oil, grease, fuels, and miscellaneous construction wastes. Implementation of the BMPs described in the SWPPP and WVECP would reduce potential impacts.



Environmental Analysis

HYDROLOGY AND WATER QUALITY

Pollutants generated from the operational phase of the project may include sediment, nutrients, organic compounds, trash and debris, oxygen-demanding substances, bacteria and viruses, oil and grease, and pesticides. The project would also prepare and implement a SUSMP in accordance with the Los Angeles County's SUSMP requirements, and water quality impacts would be less than significant. BMPs that would be implemented pursuant to both the SWPPP and SUSMP are described in detail above under Impact 5.8-1.

IMPACT 5.8-6: THE PROJECT WOULD NOT CREATE FLOOD HAZARDS ARISING FROM POTENTIAL FAILURE OF TWO 750,000-GALLON WATER TANKS TO BE DEVELOPED NEAR THE WESTERN SITE BOUNDARY. [THRESHOLD HYD-10]

Impact Analysis: The project includes development of one 750,000-gallon water tank on a tank pad near the southwest site boundary. The tank pad would be about 0.46 acre at an elevation of approximately 2,050 feet. Currently a second water tank site is planned next to the tank that would serve the school; the second tank would serve planned residential developments next to the project site. The capacity of this second tank has also been estimated at 750,000 gallons.

The project would include the following drainage improvements to convey water released due to potential tank failure to detention/evaporation basins A1 and A2:

- The pad would be graded to slope to a 1.25-foot depression in the middle of the pad. A grated catch basin will be located in the center of the depression and will connect to a 12-inch RCP, which will drain released water to the helipad to the east.
- The released water will be conveyed around the perimeter of the helipad via a 12-inch RCP or equivalent-sized, paved swale for eventual release via a paved open trapezoidal down drain to the detention/evaporation basin (see Figure 5.7-4, *Improvements for Containing Water Potentially Released from Water Tanks*).

A water tank risk assessment was conducted for the tank proposed as part of the project and is included as Appendix G-1 to this Draft EIR. The failure scenario analyzed was the shearing off of the tank's inlet/outlet pipe during a maximum credible earthquake as a result of differential movement, resulting in a 12-inch diameter hole at the bottom of the tank. It was then assumed that water would continue to be released from the tank until it was empty. Water released due to a tank failure would not reach the school or pose a flood hazard to students, and proposed improvements for conveying released water to detention/evaporation basins would have adequate capacity for conveying released water. The water tank risk assessment is discussed in more detail in Section 5.7, *Hazards and Hazardous Materials*.

IMPACT 5.8-7: THE PROPOSED PROJECT WOULD NOT SUBJECT PEOPLE OR STRUCTURES TO SUBSTANTIAL HAZARDS FROM MUDFLOW. [THRESHOLD HYD-11]

Impact Analysis: Due to the project's proximity to mountainous areas subject to forest fires and the loss of vegetation, debris and mudflows could impact the proposed school site.

The hydrology study calculated the amount of sediment that could be produced, using the 50-year burn and bulking scenario (Sikand 2012). The debris volume in a 50-year storm in postproject conditions, 18,904 cy, would be about two-thirds that of existing conditions, 27,313 cy. Proposed retention and detention basins would have adequate capacity for storm flows from a 50-year storm in postburn conditions. Drainage rates and volumes in a 50-year storm in burned conditions are shown above in Table 5.8-5. Burned and bulked flows from the two natural canyons upstream of the project site would be routed around the school site in a

5. Environmental Analysis

HYDROLOGY AND WATER QUALITY

swale and drainage channel next to the east side of Valley Creek Road opposite the school site. The project would not subject people or structures to substantial hazards due to mudflow.

5.8.4 Cumulative Impacts

Construction and operation of the proposed project, in conjunction with related projects located within the Santa Clara River Watershed, would result in increased flows that eventually discharge to Santa Clara River and ultimately to the Pacific Ocean. Related projects are those within the Santa Clara River Watershed that would direct stormwater flows to streams and channels that drain to the Santa Clara River. Ultimate development of the proposed project and other development within the area would potentially impact water quality. Without controls, both short-term construction-related impacts and long-term operational impacts could substantially impact water quality. The impacts of the proposed project to the watershed and groundwater would be less than significant, but would incrementally contribute to the increase in impervious surfaces and discharge of pollutants and sediment to receiving waters and groundwater within the region. As with the proposed project, related projects would each be required to mitigate impacts through implementation of a project-specific SUSMP. The SUSMP is required to demonstrate that the project in question would implement operational BMPs to the maximum extent practicable in order to mitigate and abate anticipated and potential pollutants generated at the project site that may compromise the beneficial uses and water quality objectives of downstream receiving water bodies.

In consideration of the preceding factors, the project's contribution to cumulative hydrology and water quality impacts would be rendered less than significant, and therefore project impacts would not be cumulatively considerable.

5.8.5 Existing Regulations and Standard Conditions

- Clean Water Act, USC 1251 to 1387, and 40 CFR 122 and 124
- SWRCB NPDES General Permit for Storm Water Discharges Associated with Construction Activity (Water Quality Order 2009-0009-DWQ/NPDES Permit No. CAS000002), September 2, 2009.
- Los Angeles RWQCB Waste Discharge Requirements for Municipal Storm Water and Urban Runoff Discharges within the County of Los Angeles, and the Incorporated Cities Therein, Except the City of Long Beach (Los Angeles County MS4 Permit) (NPDES Permit No. CAS004001), December 13, 2001, amended September 14, 2006.
- Los Angeles RWQCB Final Standard Urban Storm Water Mitigation Plan for Los Angeles County and Cities in Los Angeles County, March 8, 2000.

5.8.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: Impacts 5.8-1, 5.8-2, 5.8-3, 5.8-4, 5.8-5, 5.8-6, 5.8-7, and cumulative impacts.

5.8.7 Mitigation Measures

No mitigation measures are required.



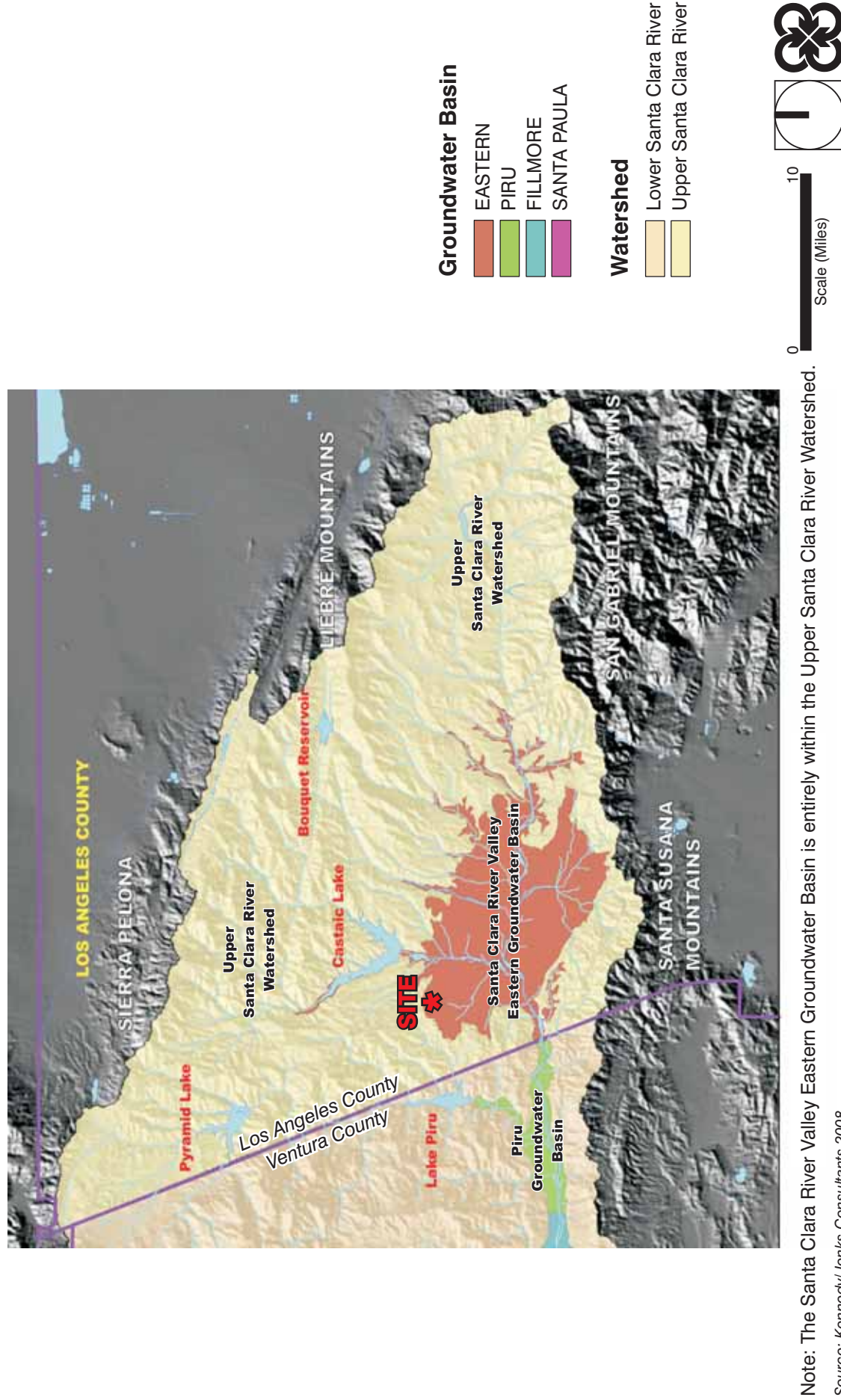
Environmental Analysis

HYDROLOGY AND WATER QUALITY

5.8.8 *Level of Significance After Mitigation*

Hydrology impacts would be less than significant.

Watershed and Groundwater Basin



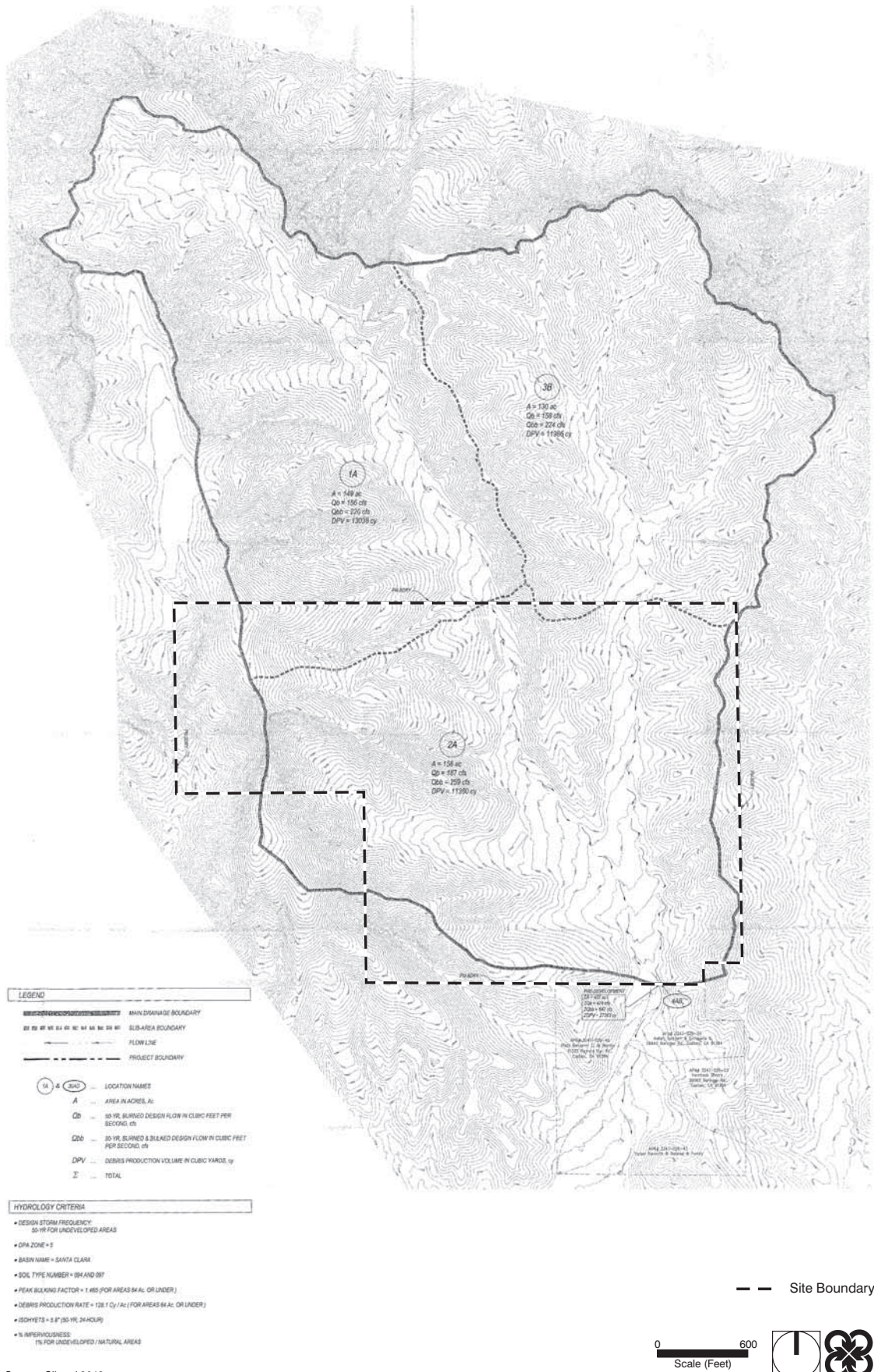
Environmental Analysis

HYDROLOGY AND WATER QUALITY

This page intentionally left blank.

5. Environmental Analysis

Existing Site Drainage



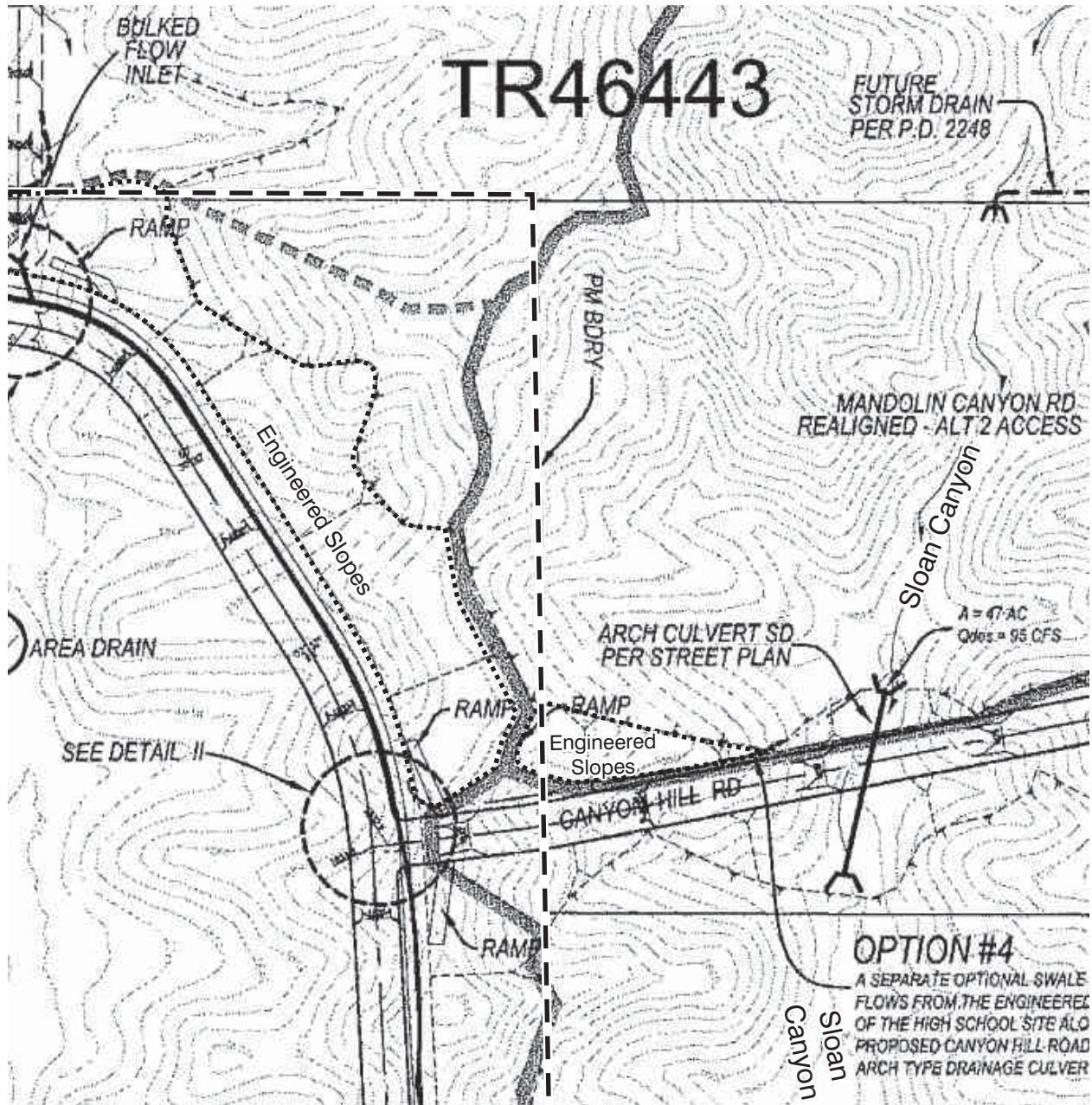
Environmental Analysis

HYDROLOGY AND WATER QUALITY

This page intentionally left blank.

5. Environmental Analysis

Proposed Drainage Plan for Slopes Next to Northeast Campus Boundary



--- Site Boundary

Source: Sikand 2012

Castaic High School Draft EIR

The Planning Center | DC&E • **Figure 5.8-3**

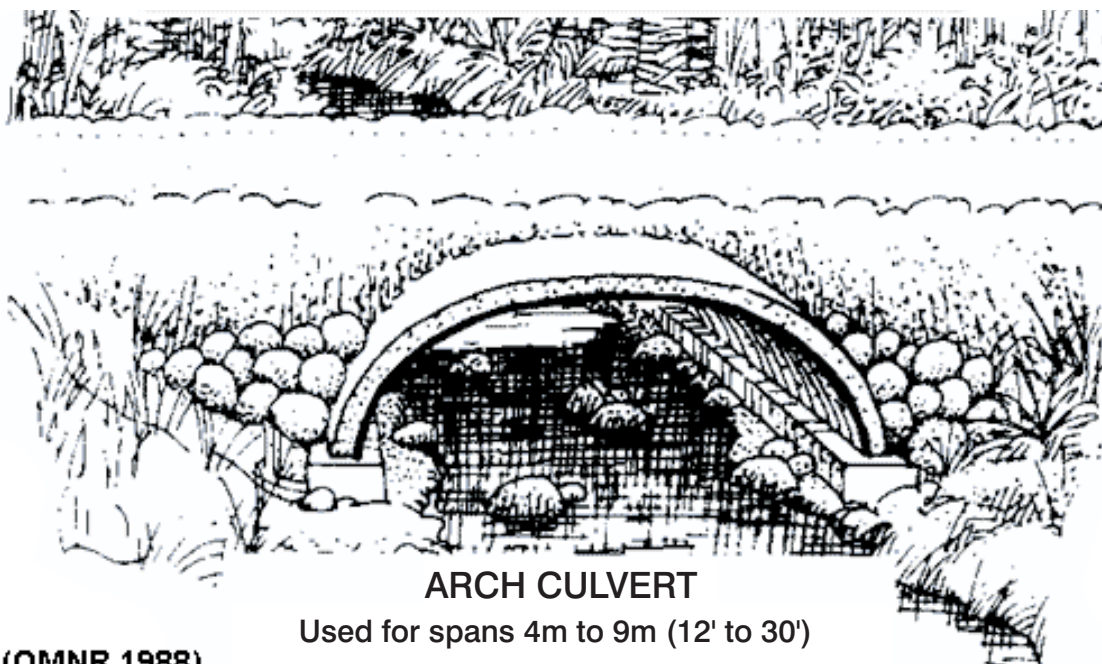
Environmental Analysis

HYDROLOGY AND WATER QUALITY

This page intentionally left blank.

5. Environmental Analysis

Concrete Arch Culvert



(OMNR 1988)

Source: USFWS 2012



Source: Bridgemap.com 2012

Environmental Analysis

HYDROLOGY AND WATER QUALITY

This page intentionally left blank.

*Proposed Drainage Improvements,
Southeast Part of the Project Site*

The Planning Center | DC&E • **Figure 5.8-5**

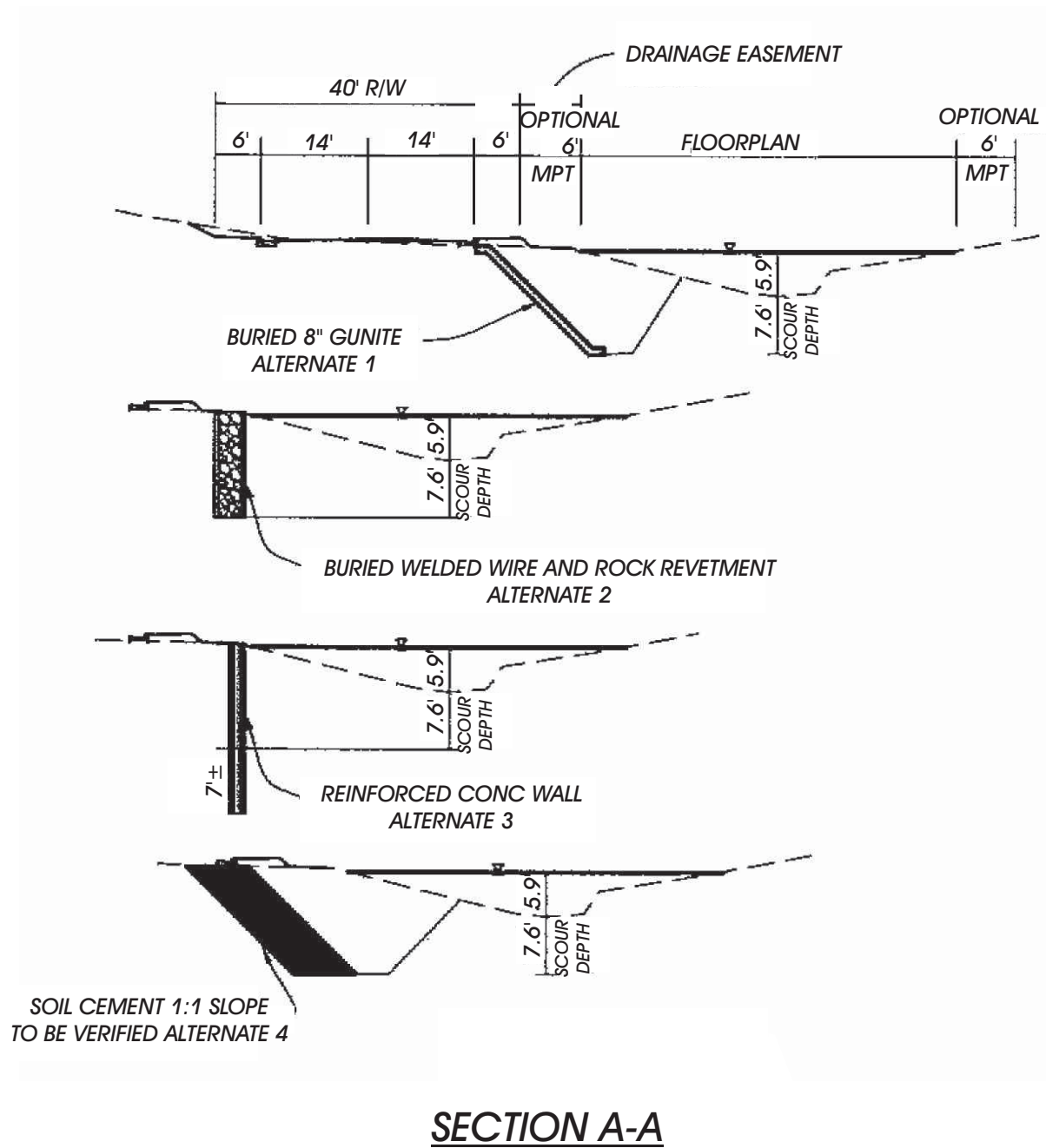
Environmental Analysis

HYDROLOGY AND WATER QUALITY

This page intentionally left blank.

5. Environmental Analysis

Road Protection, Valley Creek Road near Southeast Site Boundary



Source: Sikand 2012

Castaic High School Draft EIR

The Planning Center | DC&E • **Figure 5.8-6**

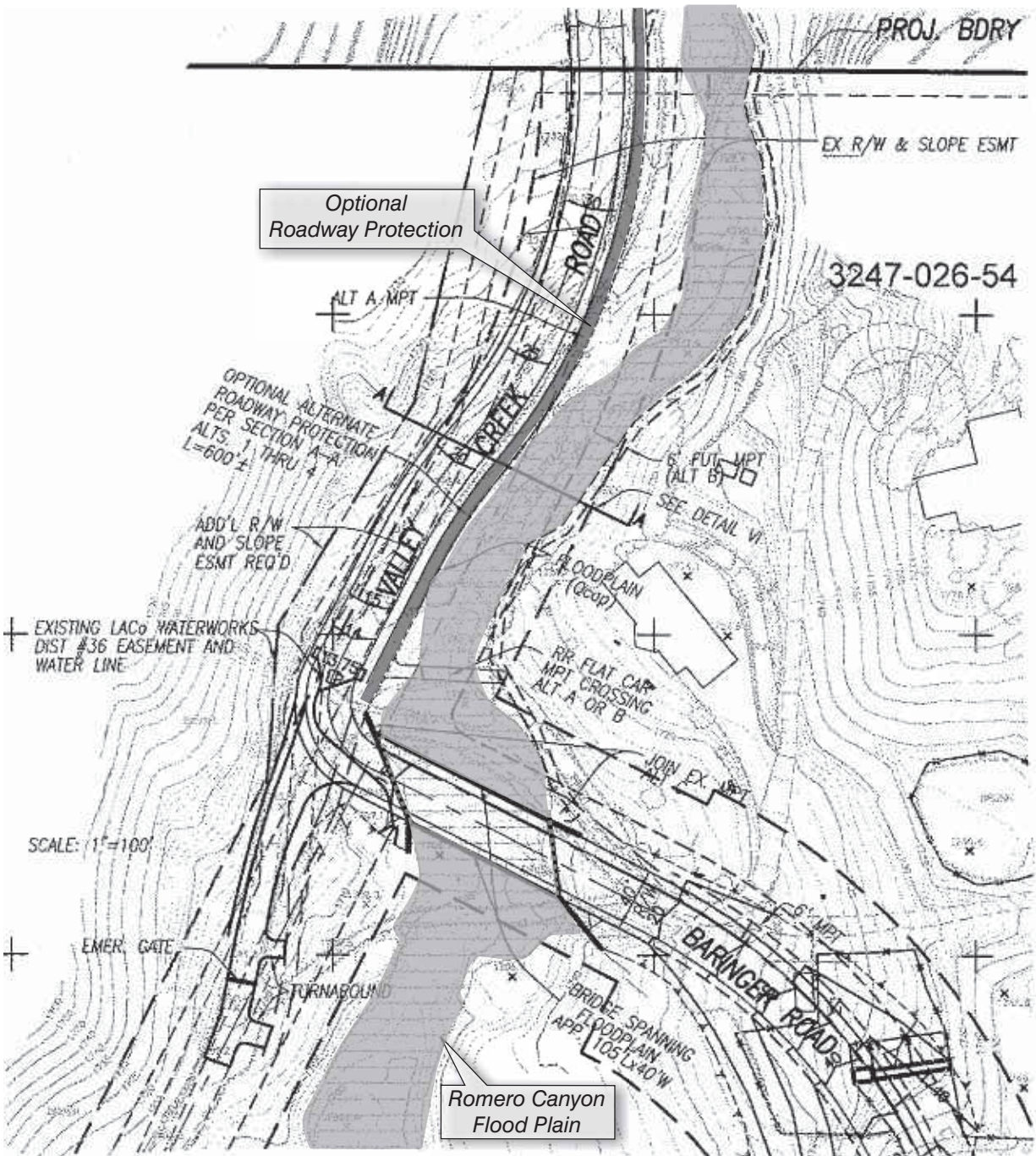
Environmental Analysis

HYDROLOGY AND WATER QUALITY

This page intentionally left blank.

5. Environmental Analysis

Option 1, Drainage Improvements, Valley Creek Road at Baringer Road



— Site Boundary

Source: Sikand 2012

Castaic High School Draft EIR

0 100
Scale (Feet)

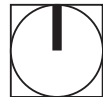


Environmental Analysis

HYDROLOGY AND WATER QUALITY

This page intentionally left blank.

Source: Sikand 2012

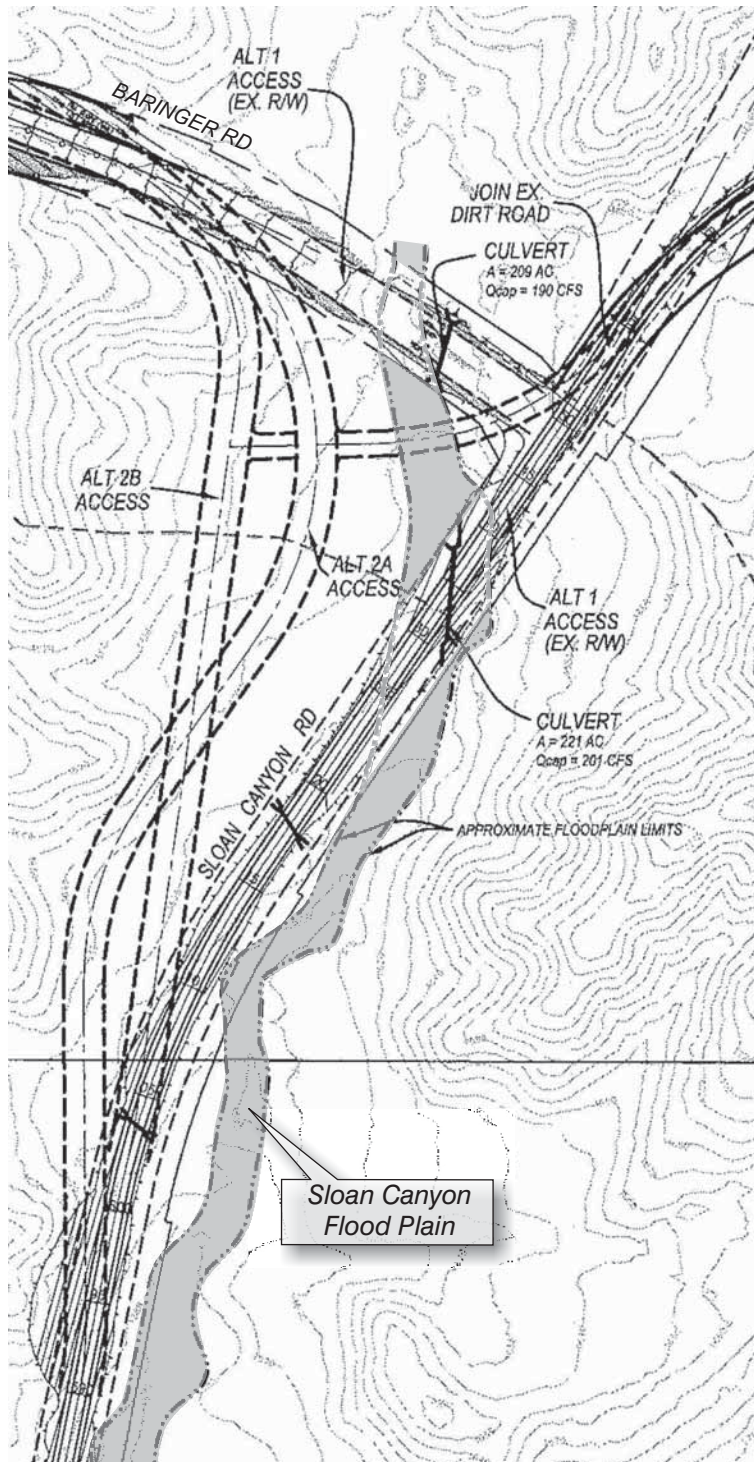


Environmental Analysis

HYDROLOGY AND WATER QUALITY

This page intentionally left blank.

Drainage Options: Intersection of Baringer Road with Sloan Canyon Road



0 150
Scale (Feet)



Environmental Analysis

HYDROLOGY AND WATER QUALITY

This page intentionally left blank.

5. Environmental Analysis

5.9 LAND USE AND PLANNING

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential impacts to land use in the Community of Castaic from development of the proposed Castaic High School.

Land use impacts can be either direct or indirect. Direct impacts result in land use incompatibilities, division of neighborhoods or communities, or interference with other land use plans, including habitat or wildlife conservation plans. This section focuses on direct land use impacts. Indirect impacts are secondary effects resulting from land use policy implementation, such as an increase in demand for public utilities or services, or increased traffic on roadways. Indirect impacts are addressed in other sections of this DEIR.

5.9.1 Environmental Setting

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is a council of governments representing Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. SCAG is the federally recognized metropolitan planning organization (MPO) for this region, which encompasses over 38,000 square miles. SCAG is a regional planning agency and a forum for addressing regional issues concerning transportation, the economy, community development, and the environment. SCAG is also the regional clearinghouse for projects requiring environmental documentation under federal and state law. In this role, SCAG reviews proposed development and infrastructure projects to analyze their impacts on regional planning programs. As the southern California region's MPO, SCAG cooperates with South Coast Air Quality Management District (SCAQMD), the California Department of Transportation (Caltrans), and other agencies in preparing regional planning documents. SCAG has developed regional plans to achieve specific regional objectives.



Los Angeles County General Plan

The existing general plan designation for the site is RL-2 (Rural Land 2), permitting single-family residences at a maximum density of one dwelling unit per two acres. Other permitted uses in the RL-2 designation include agriculture, equestrian uses, private recreation, and public and institutional facilities serving the local area. Specific allowable uses are determined by the underlying zoning designation. General plan designations on surrounding land include RL-2; RL-5 (Rural Land 5, with a maximum density of five acres per dwelling unit) on land opposite the southwest corner of the project site; and RL-1 (Rural Land 1, with a maximum density of one acre per dwelling unit) on land next to the northeast site boundary.

Los Angeles County Zoning Designation

The project site and all surrounding parcels are designated A-2-2, Heavy Agriculture, under the Los Angeles County Zoning Ordinance (Los Angeles County Code Title 22). Single-family residences are permitted in the A-2-2 zone at a density of up to two units per net acre. Permitted uses in the A-2-2 zone include agricultural uses such as crop cultivation and animalkeeping; small group residential facilities for adults and children; veterinary and kennel facilities; specified types of food processing facilities; and oil wells. Public K-12 schools are permitted in the A-2-2 zone with a conditional use permit (CUP).

Castaic Area Town Council

The Castaic Area Town Council is an advisory board presenting community points of view to the Los Angeles County Board of Supervisors and various county departments such as Regional Planning, Public Works, and

5. Environmental Analysis

LAND USE AND PLANNING

Parks & Recreation. The Castaic Area Town Council is composed of ten elected representatives from five regions within the 100 square miles of Castaic and its various communities, including Val Verde (CATC 2012b).

Castaic Area Community Standards District

The Castaic Area Community Standards District (CSD) has formulated a set of guidelines for a specific portion of the county, approved by the County Board of Supervisors in 2004 and subsequently entered into the book of county ordinances (Section 22.44.137). CSD regulations supplement the countywide zoning and subdivision regulations. The CSD boundary, shown in Figure 5.10-1, *Castaic Area CSD*, extends from just south of SR-126 north into the Angeles National Forest. The CSD contains development standards for new developments in the CSD area. The CSD's goal is to help maintain the rural look and feel and the natural resources of the area. The CSD defines how Castaic should grow and sets up guidelines for developers, county officials, and citizens in managing that growth. It identifies several ridgelines and trails in the area to be preserved and requires minimum lot sizes for new development (CATC 2012c).

Santa Clarita Valley Area Plan

In conjunction with the other chapters and elements of the Los Angeles County General Plan, the SCVAP is a coordinated statement of the county's public policy that provides the regional planning commission and board of supervisors with a framework for making critical public decisions relating to the Santa Clarita Valley and guides them in efforts to improve quality of life in the valley. The SCVAP spans 484 square miles, extending westward from the western San Gabriel Mountains and encompassing the Santa Clarita Valley and mountains and hills west of the Valley. The plan area includes the 53-square-mile City of Santa Clarita, 237 square miles of Angeles National Forest, and 195 square miles of unincorporated Los Angeles County outside of National Forest jurisdiction (DRP 2009).

5.9.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

- LU-1 Physically divide an established community.
- LU-2 Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- LU-3 Would the proposed school conflict with any existing or proposed land uses, such that a potential health or safety risk to students would be created?
- LU-4 Conflict with any applicable habitat conservation plan or natural community conservation plan.

The Initial Study, included as Appendix A, substantiates that impacts associated with Thresholds LU-1 and LU-4 would be less than significant. These impacts will not be addressed in the following analysis.

5. Environmental Analysis

LAND USE AND PLANNING

5.9.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.10-1: PROJECT IMPLEMENTATION WOULD NOT CONFLICT WITH APPLICABLE PLANS ADOPTED FOR THE PURPOSE OF AVOIDING OR MITIGATING AN ENVIRONMENTAL EFFECT. [THRESHOLD LU-2]

Impact Analysis: Development of the proposed school would not conflict with applicable plans adopted for avoiding or mitigating an environmental effect. Such plans applicable to land use include the zoning and General Plan land use designation.

The project site and all surrounding parcels are designated A-2-2, Heavy Agriculture, under the Los Angeles County Zoning Ordinance (Los Angeles County Code Title 22). Single-family residences are permitted in the A-2-2 zone at a density of up to two units per net acre. Public K–12 schools are permitted in the A-2-2 zone with a CUP.

The California legislature granted school districts the power to exempt school construction projects from county and city general plan designations and related land use and zoning requirements, provided the school district complies with the terms of Government Code Section 53094. As lead agency for the proposed project, the William S. Hart Union High School District would comply with the following criteria for implementation of the county land use overrides:

- Two-thirds of the governing board must vote to render a county's zoning ordinance regulations inapplicable;
- Within 10 days of taking the action, the governing board must provide the county with notice of the action under Section 53094.

While there are oak trees on the school site and access road alignments, the Los Angeles County Oak Tree Ordinance, Section 22.56.2050 et seq. of the Los Angeles County Code, does not apply to the school district (as a division of the state) or this project.

Permitted uses in general plan designations are based on the underlying zoning designation; thus, upon exemption of the project by the District governing board, development of the high school would not conflict with permitted land use plans for the project site. Land use plan impacts would be less than significant.

IMPACT 5.10-2: THE PROPOSED PROJECT WOULD NOT CONFLICT WITH ANY EXISTING OR PROPOSED LAND USES. [THRESHOLD LU-3]

Impact Analysis: Besides natural undeveloped land, the only other land use on the site and on the adjoining properties is a few scattered homes, dirt roads, and an abandoned oil well. The proposed school use would not be incompatible with historical use of the project site. The new school would not create a potential health or safety risk to students (see Section 5.7, *Hazards and Hazardous Materials* for more detailed discussion). Schools are generally essential parts of the surrounding communities and do not create land use conflicts. The proposed project would be developed so that existing and future area students can attend a school near their homes. Land use compatibility impacts would be less than significant.



5. Environmental Analysis

LAND USE AND PLANNING

5.9.4 Cumulative Impacts

Of the 17 related projects that were identified, one is an elementary school that would be developed by the Castaic Union School District. All other related projects are residential projects and would be required to comply with Los Angeles County Code Title 22 (Planning and Zoning), with the Santa Clarita Valley Area Plan, and with development standards of the Castaic Area CSD.

In consideration of the preceding factors, the project's contribution to cumulative land use impacts would be less than significant, and therefore project impacts would not be cumulatively considerable.

5.9.5 Existing Regulations and Standard Conditions

Los Angeles County

- Santa Clarita Valley Area Plan
- Los Angeles County Zoning Ordinance (Los Angeles County Code Title 22)
- Castaic Area Community Standards District

5.9.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, Impacts 5.10-1 and 5.10-2 would be less than significant.

5.9.7 Mitigation Measures

No mitigation measures are required.

5.9.8 Level of Significance After Mitigation

Land use and planning impacts would be less than significant.

5.10 NOISE

This section of the Draft Environmental Impact Report (Draft EIR) evaluates the potential for the Castaic High School project (proposed project) to impact noise in a local context. The analysis in this section is partially based on the project trip generation provided by Austin-Foust Associates (Appendix J). This evaluation uses procedures and methodologies as specified by Caltrans, the Federal Highway Administration (FHWA), and the Federal Transit Administration (FTA). The noise model output sheets are included in Appendix I.

All figures are placed at the end of this section.

5.10.1 Environmental Setting

Fundamentals of Sound

Sound is a pressure wave transmitted through the air. It is described in terms of loudness or amplitude (measured in decibels), frequency or pitch (measured in Hertz [Hz] or cycles per second), and duration (measured in seconds or minutes). The standard unit of measurement of the loudness of sound is the decibel (dB). Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale to better account for the large variations in pressure amplitude (that is, the range of human hearing, from the threshold of detectability to the threshold of pain represents a ratio in pressures of one to one hundred trillion). A logarithmic representation yields a much more manageable range of 0 to 140 dBA. On a logarithmic scale, an increase of 10 dB is 10 times more intense than 1 dB, while 20 dB is 100 times more intense, and 30 dB is 1,000 times more intense. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear.

Changes of 1 to 3 dB are detectable under quiet, controlled conditions, and changes of less than 1 dBA are usually indiscernible. A 3 dB change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dB is readily discernible to most people in an exterior environment, and a 10 dBA change is perceived as a doubling (or halving) of the sound.

While the human ear has a wide range of sensitivities to pressure fluctuations, it is not equally sensitive at all frequencies. Sound waves below 16 Hz are not heard at all and are experienced more as vibration. Similarly, while people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz. Since the human ear is not equally sensitive to sound at all frequencies, a special, frequency-dependent rating scale is usually used to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by filtering frequencies in a manner approximating the sensitivity of the human ear. That is, an A-weighted noise level deemphasizes low and very high frequencies of sound, similar to the human ear.

Measurement of Sound

Sound dissipates exponentially with distance from the noise source. This phenomenon is known as “spreading loss” or distance attenuation. For a single point source, sound levels decrease by approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dB for each doubling of distance over hard or reflective surfaces (i.e., a “hard site” environment). For propagation in a relatively flat environment with absorptive, “soft site” conditions (e.g.,



5. Environmental Analysis

NOISE

vegetation, grass, or loose soil), the attenuation factors increase to approximately 7.5 dB for point sources and 4.5 dB for line sources with each doubling of distance.

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time. In other words, half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_2 , L_8 and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour. These “L” values are typically used to demonstrate compliance for stationary noise sources with a city’s noise ordinance, as discussed below. Other values typically noted during a noise survey are the L_{min} and L_{max} . These values represent the minimum and maximum noise levels, respectively, obtained over the measurement period.

Noise descriptors such as the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}) are often utilized to evaluate community noise impacts. To account for human sensitivity to nighttime noise the CNEL descriptor requires that an artificial increment of 5 dBA be added to the actual noise level for the hours from 7:00 PM to 10:00 PM and 10 dBA for the hours from 10:00 PM to 7:00 AM. The L_{dn} descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 PM and 10:00 PM. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., producing a slightly higher result, but rarely differing by more than 1 dB). As a matter of practice, L_{dn} and CNEL values are considered to be equivalent and are treated as such in this assessment.

Psychological and Physiological Effects of Noise

Noise is defined as unwanted sound, and is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, the federal government, the State of California, and many local governments have established criteria to protect public health and safety and to prevent disruption of certain human activities.

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, and thereby affecting blood pressure, functions of the heart, and the nervous system. In comparison, extended periods of noise exposure above 90 dBA could result in permanent hearing damage.

The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying, less developed areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, and disturbance of concentration) and cause annoyance.

Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level (SPL) number means. To help relate noise level values to common experience, Table 5.10-1 lists common experiences and their noise levels. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud).

5. Environmental Analysis

NOISE

**Table 5.10-1
Typical Noise Levels**

<i>Common Outdoor Activities</i>	<i>Noise Level (dBA)</i>	<i>Common Indoor Activities</i>
	110	Rock Band
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: Caltrans 2009.



Fundamentals of Vibration

Vibration is a trembling, quivering, or oscillating motion of the earth. Like noise, vibration is transmitted in waves, but in this case through the earth or solid objects. Unlike noise, vibration is typically of a frequency that is felt rather than heard. Vibration can be either natural, as in earthquakes, volcanic eruptions, sea waves, and landslides, or can be man-made, as from explosions, heavy machinery, or heavy vehicles such as trains. Both natural and man-made vibration may be continuous (e.g., operating machinery) or transient (an explosion).

As with noise, vibration can be described by both its amplitude and frequency. Amplitude may be characterized in three ways, including displacement, velocity, and acceleration. Particle displacement is a measure of the distance that a vibrated particle travels from its original position and is typically measured in inches or millimeters. Particle velocity is the rate of speed at which soil particles move in inches per second or millimeters per second. Particle acceleration is the rate of change in velocity with respect to time and is measured in inches per second or millimeters per second. Typically, particle velocity (measured in inches or millimeters per second) and/or acceleration (measured in gravities) are used to describe vibration. Table 5.10-2 presents the human reaction to various levels of peak particle velocity.

5. Environmental Analysis

NOISE

Table 5.10-2
Human Reaction to Typical Vibration Levels

Vibration Level Peak Particle Velocity (in/sec)	Human Reaction	Effect on Buildings
0.006–0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people	Virtually no risk of “architectural” (i.e., not structural) damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk to “architectural” damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause “architectural” damage and possibly minor structural damage

Source: Caltrans 2002.

The variations in frequency can also affect the perception of vibrational energy. Construction vibration typically falls in the range of 10 to 30 Hz, but is predominantly centered around 15 Hz. Traffic vibrations exhibit a similar range of frequencies, but due to their suspension systems, buses often generate frequencies around 3 Hz at high speeds. It is possible, but less common, to measure traffic frequencies above 30 Hz.

Like sound waves traveling through air (or water), the way in which vibration is transmitted through the earth is called propagation. Propagation of groundborne vibrations is complicated and difficult to predict because of the endless variations in the soil. The three main types of vibration propagation are: surface, compression and shear waves. Surface waves, or Raleigh waves, travel along the ground’s surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a “push-pull” fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or “side-to-side,” perpendicular to the direction of propagation.

As vibration waves propagate from a source, the energy is spread over an ever-increasing area such that the energy level striking a given point is reduced with the distance from the energy source. This geometric spreading loss is inversely proportional to the square of the distance. Wave energy is also reduced with distance as a result of material damping in the form of internal friction, soil layering, and void spaces. The amount of attenuation provided by material damping varies with soil type and condition as well as the frequency of the wave.

Construction operations generally include a wide range of activities that can generate groundborne vibration. In general, blasting and demolition of structures generate the highest vibrations. Vibratory compactors or rollers, pile drivers, and pavement breakers can generate perceptible amounts of vibration at up to 200 feet. Heavy trucks can also generate groundborne vibrations, which can vary depending on vehicle type, weight, and pavement conditions. Potholes, pavement joints, discontinuities, or the differential settlement of pavement all increase the vibration levels from vehicles passing over a road surface. Construction vibration is normally of greater concern than vibration from normal traffic flows on streets and freeways with smooth

5. Environmental Analysis

NOISE

pavement conditions. Trains can generate substantial quantities of vibration due to their engine weights, steel wheels (if there are flat spots), heavy loads, and metal-to-metal, wheel-rail interactions.

Regulatory Framework

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise.

California State Regulations

State of California Building Code

The State of California's noise insulation standards are codified in Title 24 California Code of Regulations, Building Standards Administrative Code, Part 2, California Building Code. These noise standards are for new construction in California for the purposes of interior compatibility with exterior noise sources. The regulations specify that acoustical studies must be prepared when noise-sensitive structures, such as residential, schools, or hospitals, are located near major transportation noises, and where such noise sources create an exterior noise level of 60 dBA CNEL or higher. Acoustical studies that accompany building plans must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new residential buildings, schools, and hospitals, the acceptable interior noise limit for new construction is 45 dBA CNEL.

State of California Noise Compatibility Standards

Table 5.10-3 shows the land use compatibility chart for community noise adopted by the State of California as part of General Plan Guidelines for the purpose of gauging the compatibility of new development in the noise environment generated by mobile sources (CONC 1976). Table 5.10-3 identifies normally acceptable, conditionally acceptable, and clearly unacceptable noise levels for various land uses.

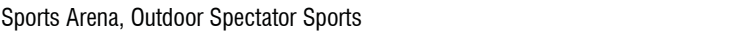
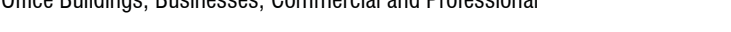
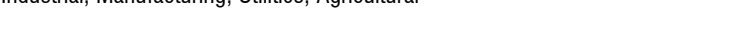
A normally acceptable designation indicates that standard construction can occur with no special noise reduction requirements. By comparison, a conditionally acceptable designation implies new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use is made and needed noise insulation features are incorporated in the design. Schools, as well as playgrounds and neighborhood parks, are normally acceptable land uses up to a noise level of 70 dBA CNEL.



5. Environmental Analysis

NOISE

Table 5.10-3
Land Use Compatibility for Community Noise Exposure (State of California)

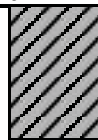
Land Uses	CNEL (dBA)					
	55	60	65	70	75	80
Residential-Low Density Single-Family, Duplex, Mobile Homes						
Residential- Multiple Family						
Transient Lodging, Motels, Hotels						
Schools, Libraries, Churches, Hospitals, Nursing Homes						
Auditoriums, Concert Halls, Amphitheatres						
Sports Arena, Outdoor Spectator Sports						
Playgrounds, Neighborhood Parks						
Golf Courses, Riding Stables, Water Recreation, Cemeteries						
Office Buildings, Businesses, Commercial and Professional						
Industrial, Manufacturing, Utilities, Agricultural						

Explanatory Notes



Normally Acceptable:

Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.



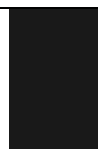
Normally Unacceptable:

New construction or development should generally be discouraged. If new construction does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.



Conditionally Acceptable:

New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and the needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.



Clearly Unacceptable:

New construction or development should generally not be undertaken.

Source: California Office of Noise Control, Guidelines for the Preparation and Content of Noise Elements of the General Plan, 2003. Included in the State of California General Plan Guidelines.

5. Environmental Analysis

NOISE

Unified School District Noise Regulations

The William S. Hart Union High School District has not adopted noise and vibration standards. For the purpose of this analysis, the noise impacts to the proposed project and to the affected nearby homes are evaluated using Los Angeles County noise standards, and vibration is evaluated using the United States Department of Transportation Federal Transit Administration (FTA) standards.

County of Los Angeles Noise Regulations

The currently adopted General Plan Noise Element does not have quantitative noise standards for regulating acceptable exterior and interior noise environments at office and institutional land uses. However, it does include goals to (a) reduce transportation noise to a level that does not jeopardize health and welfare, (b) minimize future transportation noise levels, and (c) establish compatible land uses adjacent to transportation facilities. For the purpose of this analysis, the noise compatibility chart presented above in Table 5.10-3 is used to evaluate the compatibility of exterior noise levels with the proposed project.

The county applies the noise control ordinance standards summarized in Table 5.10-4 to nontransportation noise sources (including fans, blowers, pumps, turbines, saws, engines, and similar machinery). These standards do not gauge the compatibility of developments in the noise environment, but they provide restrictions on the amount and duration of noise generated at a property, as measured at the property line of the noise receptor. The county's noise ordinance is designed to protect people from objectionable nontransportation noise sources such as music, construction activity, machinery, pumps, and air conditioners. The noise standards in Table 5.10-4, unless otherwise indicated, apply to all property within a designated noise zone.



Table 5.10-4
County of Los Angeles Exterior Noise Standards

Noise Zone	Designated Noise Zone Land Use	Time Period	Exterior Noise Level (dBA)
I	Noise-Sensitive Area	Anytime	45
II	Residential Properties	10 PM to 7 AM	45
		7 AM to 10 PM	50
III	Commercial Properties	10 PM to 7 AM	55
		7 AM to 10 PM	60
IV	Industrial Properties	Anytime	70

Source: Los Angeles County, *Los Angeles County Code*. Title 12 Environmental Protection, Chapter 12.08 Noise Control, Section 12.08.390 Exterior Noise Standards

There are no known areas in the project site vicinity that are designated Noise Zone I (noise-sensitive). However, there are several, mostly-scattered Zone II (residential) areas to the south and east of the site. The applicable standards listed in Table 5.10-4 should not be exceeded at the property line of a noise-sensitive use for:

- the applicable standard for a cumulative period of more than 30 minutes in any hour; equivalent to the L_{50} sound level;

5. Environmental Analysis

NOISE

- the applicable standard plus 5 dBA for a cumulative period of more than 15 minutes in any hour; equivalent to the L_{25} sound level;
- the applicable standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour; equivalent to the L_8 sound level;
- the applicable standard plus 15 dBA for more than the standard for a cumulative period of more than 1 minute in any hour; equivalent to the L_2 sound level;
- the noise standard plus 20 dBA for any time period; equivalent to the L_0 or L_{max} sound level.

In cases where the existing noise environments are already above these standards, then the pertinent ambient noise metric replaces the tabled value (i.e., if the ambient L_{50} exceeds the standard, then the ambient L_{50} becomes the standard or if the ambient L_8 exceeds the standard, then the ambient L_8 becomes the standard, and so on). Also, if the measurement location is on a boundary of a property between two different noise zones (see Table 5.10-4), the exterior noise level shall be the arithmetic mean of the exterior noise levels of the subject zones.

Section 20.72.130 of the County Code prohibits residential waste collectors to collect solid waste within a residential area between the nighttime hours of 10:00 PM and 6:00 AM. Commercial and industrial waste collectors may provide collection services at any time; provided, however, that commercial or industrial waste collections within 500 feet of residential areas are limited to the times specified for the residential waste collectors.

Construction Noise Standards

Section 12.08.440 of the county code prohibits construction noise between the hours of 7:00 PM and 7:00 AM on weekdays, and at any time on Sunday or a federal holiday if it creates a disturbance across a residential or commercial property line. The County also sets maximum noise levels during construction. The ordinance further includes specific construction noise restrictions that apply to residential and commercial properties, as presented in Table 5.10-5.

Table 5.10-5			
County of Los Angeles Maximum Construction Noise Limits (dBA L_{max})			
Construction Time	Single-Family Residential	Multifamily Residential	Semiresidential/ Commercial
Mobile Equipment (Maximum levels for nonscheduled, intermittent, short-term construction noise of less than 10 days)			
Daily, 7 AM to 8 PM except Sundays and legal holidays	75	80	85
Daily, 8 PM to 7 AM and all day Sunday and legal holidays	60	64	70
Stationary Equipment (Maximum levels for repetitively scheduled and relatively long-term construction noise of 10 days or more)			
Daily, 7 AM to 8 PM except Sundays and legal holidays	60	65	70
Daily, 8 PM to 7 AM and all day Sunday and legal holidays	50	55	60
Source: Los Angeles County, Los Angeles County Code. Title 12 Environmental Protection, Chapter 12.08 Noise Control, Section 12.08.440 Construction Noise.			

5. Environmental Analysis

NOISE

Table 5.10-5 shows the maximum noise levels that may be generated from construction equipment. Noise from the operation of heavy equipment such as dozers, excavators and backhoes at single-family homes shall not exceed 75 dBA L_{max} during the daytime and 60 dBA L_{max} during the nighttime. Noise from the operation of stationary equipment such as pumps and compressors shall not exceed 60 dBA L_{max} during the daytime and 50 dBA L_{max} during the nighttime at single-family homes.

Variances

The County of Los Angeles grants variances from the requirements of the noise control ordinance if the activity, operation, or noise source cannot feasibly comply with its provisions and no other reasonable alternative is available to the applicant (LA County Code Section 12.08.580). In granting a variance, the county may prescribe any conditions or requirements deemed necessary to minimize adverse effects upon the community or the surrounding neighborhood.

Vibration Standards

The County does not have specific limits or thresholds for vibration. The FTA provides criteria for acceptable levels of ground-borne vibration for various types of uses that are sensitive to vibration. The FTA criteria were used for this analysis.

Vibration Annoyance

The human reaction to various levels of vibration is highly subjective and varies from person to person. Table 5.10-6 shows the FTA criteria to evaluate vibration-related annoyance due to resonances of the structural components of a building. These criteria are based on the work of many researchers that suggests that humans are sensitive to vibration velocities in the range of 8 to 80 Hz.



Table 5.10-6
Groundborne Vibration Criteria: Human Annoyance

<i>Land Use Category</i>	<i>Max L_v (VdB)^a</i>	<i>Description</i>
Workshop	90	Distinctly felt vibration. Appropriate to workshops and nonsensitive areas
Office	84	Felt vibration. Appropriate to offices and non-sensitive areas.
Residential – Daytime	78	Barely felt vibration. Adequate for computer equipment.
Residential – Nighttime	72	Vibration not felt, but groundborne noise may be audible inside quiet rooms.

Source: FTA 2006.

^a L_v is the velocity level in decibels, as measured in 1/3-octave bands of frequency over the frequency ranges of 8 to 80 Hz.

Vibration-Related Architectural Damage

Structures amplify groundborne vibration, and wood-frame buildings, such as typical residential structures, are more affected by ground vibration than heavier buildings. However, the level at which groundborne vibration is strong enough to cause architectural damage has not been determined conclusively. The most conservative estimates are reflected in the FTA standards, shown in Table 5.10-7.

5. Environmental Analysis

NOISE

Table 5.10-7
Groundborne Vibration Criteria: Architectural Damage

Building Category	PPV (in/sec)	L_v (VdB)^a
I. Reinforced concrete, steel, or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90

Source: FTA 2006.

^a RMS velocity calculated from vibration level (VdB) using the reference of one microinch/second.

Sensitive Receptors

Certain land uses are particularly sensitive to noise and vibration. These uses include residential, school, and open space/recreation areas where quiet environments are necessary for enjoyment, public health, and safety. Commercial and industrial uses are not considered noise- and vibration-sensitive uses. The closest sensitive receptor to the project site is the single-family residence approximately 350 feet from the southern boundary of the proposed project site. Other nearby sensitive receptors include the low-density residential land uses farther to the south and several single-family residences approximately 1,000 feet to the east of the project site.

Existing Noise Environment

The project site and the surrounding vicinity consist of hills, steep ridges, and canyons. The site is in a natural, undeveloped state with the exception of a few dirt roads and the aforementioned scattered residences. It has both gentle hills and rugged, steep slopes surrounding canyons. Ridgelines that run north to south are located along the western and central portions of the site. Currently there are no paved roads either accessing the site or on the site. Access to the project site is via Romero Canyon Road, a dirt road, which becomes paved about 0.5 mile south of the site, continuing southward 1.3 more miles to Hasley Canyon Road, a two-lane paved road. Regional access to the site is via I-5 at Hasley Canyon Road, Sloan Canyon Road, or Parker Road.

Existing ambient daytime noise levels were measured at seven locations to identify the major noise sources in the area and identify the existing noise levels at nearby residential areas in the vicinity of the project site. The noise measurements were taken on June 11, 2012, between 11:30 AM and 2:45 PM; the noise measurement locations are presented in Figure 5.10-1, *Noise Monitoring Locations*.

The noise levels were measured using a Larson-Davis Model 820 sound level meter, which satisfies the American National Standards Institute (ANSI) for general environmental noise measurement instrumentation and for Type 1 accuracy. The sound level meter and microphone were mounted on a tripod five feet above the ground and equipped with a windscreen during all measurements. The sound level meter was set to “slow” time constant mode to record noise levels using the “A” weighting filter network. Meteorological conditions during the measurement periods were favorable and representative of the typical conditions, with clear skies, daytime temperatures ranging from 70 to 85 degrees Fahrenheit (°F), and wind speeds of less than 5 miles per hour. The average noise levels are identified in Table 5.10-8.

5. Environmental Analysis

NOISE

Table 5.10-8
Noise Measurements Along Local Roadways

Monitoring Site	L_{min}	L_{eq}	L_{max}
Monitoring Site #1 – Located in front of rural residential properties near the corner of Sloan Canyon Road and Sleepy Creek Lane, approximately 2,000 feet to the southeast of the project site.	30.9	47.3	61.6
Monitoring Site #2 – Located by single-family homes at Sloan Canyon Road approximately 2,000 feet east of the project site.	27.1	37.2	52.3
Monitoring Site #3 – Located adjacent to single-family homes front yards, approximately 1,500 feet east of the project site.	36.1	45.2	55.8
Monitoring Site #4 – Located along Sloan Canyon Road right-of-way adjacent to single-family homes front yards, approximately 4,500 feet east of the project site.	32.7	44.6	55.7
Monitoring Site #5 – Located approximately 40 feet from the centerline of Parker Road, adjacent to single-family homes backyards.	40.4	56.2	91.3
Monitoring Site #6 – Located adjacent to a single-family home backyard facing Sloan Canyon Road, approximately 30 feet from the roadway centerline.	42.6	61.8	82.3
Monitoring Site #7 – Located adjacent to single-family homes approximately 700 feet west of the I-5 Freeway, and approximately 40 feet from the road centerline.	48.5	62.0	75.5

Note: Noise monitoring locations shown on Figure 5.10-1, and locations and output summaries included in Appendix I.

During the survey, energy-average noise levels within the areas surrounding the project site (sites 1 to 3) ranged from 37.2 to 47.3 dBA L_{eq} . The existing noise levels in the vicinity of the project are influenced by sporadic vehicular traffic on Sloan Canyon Road, mechanical equipment such as tractors and all-terrain vehicles (ATV) at the ranch properties in the area, and aircraft overflights. Vehicular traffic on I-5 could not be heard in the vicinity of the project site (i.e., at measurement locations 1 through 4). The higher noise levels ranging from 44.6 to 62.0 dBA L_{eq} were observed along the roads that would be used for access to the project site. The noise levels at these locations were caused by vehicular traffic along Sloan Canyon Road, Parker Road, The Old Road, and I-5 (I-5 traffic was audible at measurement locations 5 through 7).

On-Road Vehicles

To assess the potential for mobile-source noise impacts, it is necessary to determine the noise currently generated by vehicles traveling through the project area. Average daily traffic (ADT) volumes for the study area roadway segments (see Section 5.14, *Transportation and Traffic*) were based on the existing daily traffic volumes provided by Austin-Foust and Associates. The results of this modeling indicate that average noise levels along study area roadway segments currently range from approximately 51 dBA to 67 dBA CNEL as calculated at a distance of 50 feet from the centerline of the road. Noise levels for existing conditions along analyzed roadways are presented in Table 5.10-9.



5. Environmental Analysis

NOISE

**Table 5.10-9
Existing Traffic Noise Levels**

Roadway	Segment	ADT Volumes	CNEL (dBA at 50 feet)	Distance to CNEL Contour (Feet from Centerline)		
				65 (dBA CNEL)	70 (dBA CNEL)	75 (dBA CNEL)
Sloan Canyon Road	West of Quail Valley Road	1,000	51.3	ROW ¹	ROW	ROW
Sloan Canyon Road	East of Quail Valley Road	3,000	61.2	ROW	21	66
Parker Road	East of Sloan Canyon Road	4,000	62.5	ROW	28	88
Quail Valley Road	South of Sloan Canyon Road	2,000	54.3	ROW	ROW	ROW
Sloan Canyon Road	East of The Old Road	10,000	66.5	22	70	221
Lake Hughes Road	East of I-5 Ramps	13,000	66.6	23	73	230
Lake Hughes Road	East of Castaic	6,000	63.3	ROW	34	106
Parker Road	East of The Old Road	7,000	65.0	ROW	50	158
Parker Road	Between I-5 Ramps	9,000	66.1	ROW	64	203
Ridge Route Road	East of I-5 Ramps	11,000	67.1	26	82	259
Ridge Route Road	North of Castaic	6,000	63.0	ROW	32	100
The Old Road	North of Sloan Canyon	8,000	66.9	25	78	247
The Old Road	South of Parker	6,000	65.7	19	59	185
Sloan Canyon Road	North of Hillcrest	1,000	51.3	ROW	ROW	ROW

¹ The indicated noise level is within that segment's right-of-way (ROW) boundary.

5.10.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would result in:

- N-1 Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
 - Noise generated by Castaic High School would result in stationary (nontransportation) noise that results in a noise nuisance at noise-sensitive receptors as determined in Chapter 12.08, *Noise Control*, of the County Code.
 - 50 dBA daytime and 45 dBA nighttime the applicable standard for a cumulative period of more than 30 minutes in any hour; equivalent to the L₅₀ sound level.
 - the applicable standard plus 5 dBA for a cumulative period of more than 15 minutes in any hour; equivalent to the L₂₅ sound level.

5. Environmental Analysis

NOISE

- the applicable standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour; equivalent to the L_8 sound level.
- the applicable standard plus 15 dBA for more than the standard for a cumulative period of more than 1 minute in any hour; equivalent to the L_2 sound level.
- the noise standard plus 20 dBA for any time period; equivalent to the L_0 or $L_{\max}$ sound level (equivalent to $L_{\max}$ 70 dBA daytime and 65 dBA nighttime)
- For noise compatibility, interior noise levels in classrooms should not exceed 45 dBA CNEL, and exterior noise levels at noise-sensitive areas of the school should not exceed the “normally acceptable” level of 70 dBA CNEL.

N-2 Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

Based on the noise criteria as established by the FTA, the following would be considered significant:

- Construction equipment would produce perceptible levels of vibration (78 VdB) during the daytime at off-site vibration-sensitive structures.
- Construction equipment would produce vibration that is strong enough to cause vibration-induced architectural damage based on the FTA criteria of 0.2 in/sec for typical wood-framed buildings or 0.5 in/sec for reinforced concrete, steel, or timber structures.



N-3 A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

Based on thresholds for substantial noise increase and normally compatible levels for residential uses presented in the noise compatibility criteria in Table 5.10-3, the following would be considered significant:

- When the overall noise increase at any noise-sensitive receptor (project plus cumulative projects plus ambient growth traffic) is greater than 3 dBA resulting in an ambient noise level exceeding 60 dBA CNEL and project-related traffic causes an increase greater than 1 dBA.

N-4 A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Based on local noise criteria as established in the Los Angeles County Code, the following would be considered significant:

- Construction activities occurring outside the hours of 7:00 AM to 7:00 PM as specified under the Los Angeles County Code.
- Project-related construction noise from mobile heavy construction equipment (i.e., dozers, loaders, excavators) exceeding 75 dBA $L_{\max}$, or stationary noise sources (pumps, generators) exceeding 60 dBA $L_{\max}$ at the property line of a noise-sensitive receptor.

5. Environmental Analysis

NOISE

N-5	For a project located within an airport land use plan or where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.
N-6	For a project within the vicinity of a private airstrip, expose people residing or working the project area to excessive noise levels.
N-7	For a school site located adjacent to or near a major arterial roadway or freeway, expose persons to noise levels that may adversely affect the educational program.

The initial study, included as Appendix A, substantiates that impacts related to threshold N-5 and N-6 would be less than significant. These impacts are not discussed in this section.

5.10.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.10-1 PROJECT-RELATED TRAFFIC WOULD SIGNIFICANTLY INCREASE NOISE ALONG ROADWAYS. [THRESHOLDS N-1 AND N-3]

Impact Analysis: The project would generate noise associated with additional vehicles traveling to and from the high school on local roadways. The proposed Castaic High School would have a design capacity of 2,600 students at buildout of the school campus. Based on the traffic study prepared by Austin-Faust Associates, full buildout of the high school would generate 7,834 ADT. For the purpose of this analysis, and consistent with the scenarios evaluated in the traffic impact analyses prepared for the project, traffic noise modeling was performed for the following scenarios:

- Existing
- Existing plus 1,600 Students with Single-Access Road
- Existing plus 1,600 Students with Multiple-Access Road
- Existing plus 2,600 Students with Single-Access Road
- Existing plus 2,600 Students with Multiple-Access Road
- 2014 No Project
- 2014 plus 1,600 Students with Single-Access Road
- 2014 plus 1,600 Students with Multiple-Access Road
- 2014 plus 2,600 Students with Single-Access Road
- 2014 plus 2,600 Students with Multiple-Access Road
- Buildout plus 2,600 Students with Single-Access Road
- Buildout plus 2,600 Students with Multiple-Access Road

The traffic noise levels for this project were estimated using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (RD-77-108). The FHWA model predicts noise levels through a series of adjustments to a reference sound level. These adjustments account for distances from the roadway, traffic flows, vehicle speeds, car/truck mix, length of exposed roadway, and road width. The future, 2014, and buildout scenarios assume roadway improvements at Sloan Canyon Road. For the multiple-access scenarios, Sloan Canyon road would be a 2-lane roadway (one in each direction) with a striped median. For the single-access scenarios, Sloan Canyon road would be a 4-lane roadway (two in each direction) with a striped median.

5. Environmental Analysis

NOISE

Tables 5.10-10 through 5.10-13 compare the noise levels at 50 feet from the centerline of each roadway segment without and with the project for existing and future base conditions. A significant noise impact would occur when the overall noise increase at any noise-sensitive receptor (project plus cumulative projects plus ambient growth traffic) is greater than 3 dBA resulting in an ambient noise level exceeding 60 dBA CNEL and project-related traffic causes an increase greater than 1 dBA.

Existing plus Project Conditions Traffic Noise Increases

A summary of existing and existing plus project traffic noise levels under typical school day conditions are shown in Table 5.10-10. This table shows the traffic-related noise increases due to the project over existing conditions for the 1,600-student school with single- and multiple-access scenarios and for the 2,600-student school with single- and multiple-access scenarios.

Traffic noise increases would range from 0 to 9.0 dBA. For the single-access scenario, the highest project contributions that would be considered potentially significant (greater than 1.0 dBA) are:

- Sloan Canyon Road from The Old Road to 1 mile west of Quail Hill Parkway
- Parker Road from Sloan Canyon Road to the I-5 southbound ramps
- The Old Road from Parker Road to Hillcrest Parkway

For the multiple-access scenario, the highest project contributions that would be considered potentially significant (greater than 1.0 dBA) are:

- Sloan Canyon Road from The Old Road to Hillcrest Parkway
- Parker Road from Sloan Canyon Road to The Old Road



2014 Conditions Traffic Noise Increases

A summary of traffic noise levels under typical school day conditions for 2014 are shown in Table 5.10-11. This table shows the overall noise increases (which include cumulative projects) over existing conditions for the 1,600-student school with single- and multiple-access scenarios and for the 2,600-student school with single- and multiple-access scenarios.

5. *Environmental Analysis*

NOISE

This page intentionally left blank.

5. Environmental Analysis

NOISE

**Table 5.10-10
Offsite Traffic Noise Increases: Existing plus Project**

Roadway	Segment	CNEL at 50 feet (dBA)						Project Contribution (dBA)					
		Baseline (Existing Conditions)	With 1,600 Students		With 2,600 Students		With 1,600 Students		With 2,600 Students				
			Single Access	Multiple Access	Single Access	Multiple Access	Single Access	Multiple Access	Single Access	Multiple Access			
Sloan Canyon Road	West of Quail Valley Road	51.3	58.3	54.3	60.4	56.1	56.1	7.0	3.0	9.0	4.8		
Sloan Canyon Road	East of Quail Valley Road	61.2	65.5	63.4	66.5	64.2	64.2	4.3	2.2	5.2	3.0		
Parker Road	East of Sloan Canyon Road	62.5	65.5	63.4	66.5	64.2	64.2	3.0	1.0	4.0	1.8		
Quail Valley Road	South of Sloan Canyon Road	54.3	56.1	56.1	56.1	56.1	56.1	1.8	1.8	1.8	1.8		
Sloan Canyon Rd.	East of The Old Road	66.5	66.5	66.5	66.9	66.9	66.9	0.0	0.0	0.4	0.4		
Lake Hughes Road	East of I-5 Ramps	66.6	66.6	66.6	66.9	66.9	66.9	0.0	0.0	0.3	0.3		
Lake Hughes Road	East of Castaic	63.3	63.3	63.3	63.9	63.9	63.9	0.0	0.0	0.7	0.7		
Parker Road	East of The Old Rd.	65.0	66.1	65.0	67.0	65.6	65.6	1.1	0.0	2.0	0.6		
Parker Road	Between I-5 Ramps	66.1	66.6	66.1	67.0	66.1	66.1	0.5	0.0	0.9	0.0		
Ridge Route Road	East of I-5 Ramps	67.1	67.1	67.1	67.1	67.1	67.1	0.0	0.0	0.0	0.0		
Ridge Route Road	North of Castaic	63.0	63.0	63.0	63.0	63.0	63.0	0.0	0.0	0.0	0.0		
The Old Road	North of Sloan Canyon	66.9	66.9	66.9	66.9	66.9	66.9	0.0	0.0	0.0	0.0		
The Old Road	South of Parker	65.7	65.7	65.7	66.9	66.4	66.4	0.0	0.0	1.2	0.7		
Sloan Canyon Rd.	North of Hillcrest	51.3	51.3	56.1	51.3	57.3	57.3	0.0	4.8	0.0	6.0		

5. Environmental Analysis

NOISE

Table 5.10-11 Off-Site Traffic Noise Increases: 2014 Conditions										
Roadway	Segment	Baseline (Existing Con- ditions)	CNEL at 50 feet (dBA)			Cumulative Increase			Single- Access	Multiple Access
			With 1,600 Students Single- Access	Multiple- Access	With 2,600 Students Single- Access	Multiple- Access	With 1,600 Students Single- Access	Multiple- Access		
Sloan Canyon Road	West of Quail Valley Road	51.3	61.1	59.1	67.5	59.8	9.8	7.8	16.2	8.5
Sloan Canyon Road	East of Quail Valley Road	61.2	67.8	66.0	68.5	66.5	6.6	4.8	7.2	5.2
Parker Road	East of Sloan Canyon Road	62.5	66.9	65.5	67.6	66.0	4.4	3.0	5.1	3.5
Quail Valley Road	South of Sloan Canyon Road	54.3	57.3	57.3	57.3	57.3	3.0	3.0	3.0	3.0
Sloan Canyon Road	East of The Old Road	66.5	66.9	66.9	67.2	67.2	0.4	0.4	0.8	0.8
Lake Hughes Road	East of I-5 Ramps	66.6	66.6	66.6	66.9	66.9	0.0	0.0	0.3	0.3
Lake Hughes Road	East of Castaic	63.3	63.3	63.3	63.9	63.9	0.0	0.0	0.7	0.7
Parker Road	East of The Old Road	65.0	67.0	66.1	67.7	66.6	2.0	1.1	2.7	1.5
Parker Road	Between I-5 Ramps	66.1	67.3	67.0	67.7	67.0	1.2	0.9	1.6	0.9
Ridge Route Road	East of I-5 Ramps	67.1	67.5	67.5	67.5	67.5	0.4	0.4	0.4	0.4
Ridge Route Road	North of Castaic	63.0	63.0	63.0	63.0	63.0	0.0	0.0	0.0	0.0
The Old Road	North of Sloan Canyon	66.9	66.9	66.9	66.9	66.9	0.0	0.0	0.0	0.0
The Old Road	South of Parker	65.7	66.4	65.7	66.9	66.4	0.7	0.0	1.2	0.7
Sloan Canyon Road	North of Hillcrest	51.3	N/A	57.3	N/A	58.3	N/A	6.0	N/A	7.0

5. Environmental Analysis

NOISE

Traffic noise increases from existing conditions due to the school and cumulative projects range from 0 to 16.2 dBA. For the single-access scenario, the cumulative increases that would be considered potentially significant (greater than 3.0 dBA) are:

- Sloan Canyon Road from The Old Road to 1 mile west of Quail Hill Parkway
- Parker Road from Sloan Canyon Road to The Old Road

For the multiple-access scenarios, the highest project contributions that would be considered significant (greater than 3.0 dBA) are:

- Sloan Canyon Road from The Old Road to Hillcrest Parkway
- Parker Road from Sloan Canyon Road to The Old Road

Noise level increases below 3 dB are not considered to noticeably change the noise environment. Therefore, noise increases at remaining segments would be barely perceptible to persons along roadways that would be exposed to increases less than 3 dB.

Buildout Conditions Traffic Noise Increases

A summary of project traffic noise levels for a typical school day under long-range buildout conditions is shown in Table 5.10-12. This table shows the overall noise increases, which includes cumulative projects, over existing conditions for the 2,600-student school with single- and multiple-access scenarios.



Table 5.10-12
Offsite Traffic-Noise Increases: Buildout Conditions

Roadway	Segment	CNEL at 50 feet (dBA)			Cumulative Increase	
		Baseline (Existing Conditions)	Single- access	Multiple- Access	Single- access	Multiple- Access
Sloan Canyon Road	West of Quail Valley Road	51.3	68.5	61.3	17.2	10.0
Sloan Canyon Road	East of Quail Valley Road	61.2	69.3	67.6	8.1	6.4
Parker Road	East of Sloan Canyon Road	62.5	68.8	67.6	6.3	5.1
Quail Valley Road	South of Sloan Canyon Road	54.3	58.3	58.3	4.0	4.0
Sloan Canyon Road	East of The Old Road	66.5	70.1	70.1	3.6	3.6
Lake Hughes Road	East of I-5 Ramps	66.6	70.9	70.5	4.3	3.9
Lake Hughes Road	East of Castaic	63.3	69.8	69.8	6.5	6.5
Parker Road	East of The Old Road	65.0	69.1	67.7	4.1	2.7
Parker Road	Between I-5 Ramps	66.1	69.8	69.3	3.7	3.2
Ridge Route Road	East of I-5 Ramps	67.1	70.9	70.9	3.7	3.7
Ridge Route Road	North of Castaic	63.0	66.4	66.4	3.4	3.4
The Old Road	North of Sloan Canyon	66.9	70.2	70.2	3.3	3.3
The Old Road	South of Parker	65.7	69.4	69.0	3.7	3.4
Sloan Canyon Road	North of Hillcrest	51.3	60.0	58.3	8.7	7.0

5. Environmental Analysis

NOISE

Traffic noise increases from existing conditions due to the school and cumulative projects range from 0 to 17.2 dBA. For the single-access and for the multiple-access scenarios, the cumulative increases that would be considered potentially significant (greater than 3.0 dBA) are the study area segments:

- Sloan Canyon Road from The Old Road to Hillcrest Parkway
- Parker Road from Sloan Canyon Road to the I-5 northbound ramps
- The Old Road from Parker Road to Hillcrest Parkway
- Lake Hughes Road from the Old Road to the I-5 northbound ramps
- Ridge Route Road from the I-5 northbound ramps to east of Castaic Road

Potentially Significant Traffic Noise Impacts

As discussed in threshold N-3, a potential noise impact would occur when the overall noise increase at any noise-sensitive receptor (project plus cumulative projects plus ambient growth traffic) is greater than 3 dBA resulting in an ambient noise level exceeding 60 dBA CNEL and project-related traffic causes an increase greater than 1 dBA. When potential noise impacts are identified, further analysis is warranted to evaluate if there are additional features that would reduce noise to each receptor, such as existing walls along roadways, topography, and increased distance from the receptor to the road right-of-way. Table 5.10-13 shows segments where increases in vehicular traffic would result in potentially significant noise impacts.

For the **single-access scenario**, potentially significant noise impacts would occur at noise-sensitive receptors along the following roadway segments:

- Sloan Canyon Road from The Old Road to 1 mile west of Quail Hill Parkway
- Parker Road from Sloan Canyon Road to I-5 southbound ramps
- The Old Road from Parker Road to Hillcrest Parkway

For the **multiple-access scenario**, potentially significant noise impacts would occur at noise-sensitive receptors along the following roadway segment:

- Sloan Canyon Road from The Old Road to Hillcrest Parkway
- Parker Road from Sloan Canyon Road to The Old Road.

According to observations during a site visit and with a review of aerial photography, the roadway segments identified above include several homes immediately adjacent to these roads, and the Camino Del Valle Park adjacent to Sloan Canyon Road. The homes along Sloan Canyon Road between Bobcat Way and Parker Road and on Parker Road between Sloan Canyon Road to Cherry Drive have adjacent sound walls. It is expected that the barriers adjacent to these homes would provide noise attenuation to the first floor and backyard areas. The amount of noise reduction is dependent on site specific geometry such as road elevation, pad elevation, floor heights, barrier height, and distance from the road, therefore, the specific noise reduction provided by these barriers cannot be determined without more detailed analyses. As a result, a significant noise increase may occur at these locations.

5. Environmental Analysis

NOISE

**Table 5.10-13
Offsite Traffic-Noise Impacts**

Roadway	Segment	Existing Noise Level at 50 feet (dBA CNEL)	Single Access				Multiple Access			
			Buildout Conditions Noise Level at 50 feet (dBA CNEL)	Cumulative Increase (Buildout minus Existing)	Project Contribution	Potential Impact?	Buildout Conditions Noise Level at 50 feet (dBA CNEL)	Cumulative Increase (Buildout minus Existing)	Project Contribution	Potential Impact?
Sloan Canyon Road	West of Quail Valley Road	51.3	68.5	17.2	9.0	Yes	61.3	10.0	4.8	Yes
Sloan Canyon Road	East of Quail Valley Road	61.2	69.3	8.1	5.2	Yes	67.6	6.4	3.0	Yes
Parker Road	East of Sloan Canyon Road	62.5	68.8	6.3	4.0	Yes	67.6	5.1	1.8	Yes
Sloan Canyon Road	East of The Old Road	66.5	70.1	3.6	0.4	No	70.1	3.6	0.4	No
Lake Hughes Road	East of I-5 Ramps	66.6	70.9	4.3	0.3	No	70.5	3.9	0.3	No
Lake Hughes Road	East of Castaic	63.3	69.8	6.5	0.7	No	69.8	6.5	0.7	No
Parker Road	East of The Old Road	65.0	69.1	4.1	2.0	Yes	67.7	2.7	0.6	No
Parker Road	Between I-5 Ramps	66.1	69.8	3.7	0.9	No	69.3	3.2	0.0	No
Ridge Route Road	East of I-5 Ramps	67.1	70.9	3.7	0.0	No	70.9	3.7	0.0	No
Ridge Route Road	North of Castaic	63.0	66.4	3.4	0.0	No	66.4	3.4	0.0	No
The Old Road	North of Sloan Canyon	66.9	70.2	3.3	0.0	No	70.2	3.3	0.0	No
The Old Road	South of Parker	65.7	69.4	3.7	1.2	Yes	69.0	3.4	0.7	No
Sloan Canyon Road	North of Hillcrest	51.3	60.0	N/A	0.0	No	58.3	7.0	6.0	Yes

5. Environmental Analysis

NOISE

This page intentionally left blank.

5. Environmental Analysis

NOISE

Noise level increases below 3 dB are not considered to result in a noticeable change in the noise environment. Therefore, such noise increases at remaining segments would be barely perceptible.

The proposed project would result in an increase of traffic to study area roadways listed above for the single- and multiple-access scenarios that would cause significant noise impacts at noise-sensitive receptors along study area roadways. Project-related traffic noise increase, depending on the particular buildout time frame and access road scenario, would be significant at the following segments:

- Sloan Canyon Road from The Old Road to Hillcrest Parkway
- Parker Road from Sloan Canyon Road to the I-5 SB or NB Ramps
- The Old Road from Parker Road to Hillcrest Parkway
- Lake Hughes Road From the Old Road to the I-5 Northbound Ramps
- Ridge Route Road from the I-5 Northbound Ramps to east of Castaic Road

IMPACT 5.10-2: THE AMBIENT NOISE LEVELS WOULD MEET THE 45 DBA CNEL INTERIOR SCHOOL NOISE STANDARD. [THRESHOLDS N-1 AND N-3]

Impact Analysis: An impact may be significant if the proposed project is in an area incompatible due to excessive noise. Sensitive land uses, such as schools, are "normally acceptable" in exterior noise environments up to 70 dBA CNEL. In addition, the state of California requires interior noise levels to achieve the California Building Code standard of 45 dBA CNEL. Noise levels monitored near the eastern boundaries of the project site (see Locations 2 and 3 in Table 5.10-8) ranged from 37.2 to 45.2 dBA L_{eq} . The I-5 freeway is approximately two miles east of the project site, and noise from the freeway was not heard at these locations during the site visit. There are no major roads in the vicinity of the project site.



Exterior Noise Compatibility

Outdoor areas (i.e., athletic facilities, ball fields, outdoor recreational areas) would be exposed to noise levels well below 70 dBA CNEL. Therefore, no significant noise impacts would occur from the exposure of exterior athletic fields and outdoor areas to excessive noise sources.

Interior Noise Compatibility

No major noise sources are in the vicinity of the project site. Noise levels monitored near the eastern boundaries of the project site are below 50 dBA L_{eq} . Buildings typically provide exterior-to-interior attenuation of 24 dBA with windows closed and 12 dBA with windows open (SAE 1971). With the relatively low community noise conditions, coupled with these expected sound reductions from the building components, the interior classroom environments would be well below the 45 dBA CNEL limit. Thus, no mitigation measures would be required to meet the required 45 dBA CNEL interior noise standard in classrooms.

IMPACT 5.10-3: STADIUM EVENTS WOULD NOT EXCEED THE COUNTY OF LOS ANGELES EXTERIOR NOISE LIMITS AT RESIDENTIAL USES. [THRESHOLD N-1]

Impact Analysis: Noise generated during a stadium event would be the loudest stationary-noise source at the proposed project. The stadium would have a maximum of 5,000 seats. Stadium events are held throughout the school year, typically in the evening hours. Homecoming night, rival games, and possible playoff games could result in maximum-capacity crowds. Varsity football games are generally held on Thursday or Friday nights after 7:00 PM, but would be expected to be completed by or about 10 PM. Occasional special events, such as graduation ceremonies, may also result in capacity crowds. Therefore, between four and five full-capacity events are anticipated per year.

5. Environmental Analysis

NOISE

Future Stadium Noise Levels (Periodic Increases)

General Stadium Noise

To characterize noise sources and to obtain maximum, future noise levels from stadium activities for the proposed project, noise monitoring was conducted at an existing, comparable high school stadium during a full-capacity stadium event. Table 5.10-14 shows noise levels observed during a football game (details on noise monitoring of several stadium events can be found in Appendix I).

Table 5.10-14							
Noise Monitoring at a La Quinta High School Football Game							
Monitoring Site	Noise Levels (dBA)						
	L_{max}	L_{02}	L_{08}	L_{25}	L_{50}	L_{min}	L_{eq}
Monitoring Site No. 1 – side of field at 350 feet	68.1	65.0	62.1	58.7	54.9	47.6	57.5
Monitoring Site No. 2 – side of field at 350 feet	71.1	63.3	60.1	56.1	53.3	47.6	56.7
Source: Noise monitoring at La Quinta on 10/11/02.							

As shown in Table 5.10-14, noise levels from a stadium event are in the range of 57 to 58 dBA L_{eq} and from 68 to 71 dBA L_{max} (all at approximately 350 feet from the side of the field). Noise at the stadium would be highly variable during the game, depending on the type and level of activity at the stadium. From observations and measurements at several high schools in the greater Los Angeles area, the following general statements can be made:

- Public address (PA) systems create higher sound levels than do typical crowd reactions. PA noise (commentary, announcements, etc.) occurs far more often than crowd cheers.
- Cheering is highly variable, depending on the particular moment-to-moment activity (a good play versus a score), on whether the home team or visitor experience the activity, and on the number of the home or visitor attendees.
- Cheerleaders on portable PA systems and fireworks (homecoming only) during half-time generate noise.
- Foot-stomping on aluminum bleachers can generate substantial noise.
- Other noise sources during a stadium event include referee whistles, horns, and bells.

Stadium Noise Analysis

The proposed stadium would be constructed on the south portion of the school campus. Specific details of the stadium design pertaining to acoustical performance and/or sound reduction are not known at this time. For a conservative analysis, the bleachers were assumed to be constructed out of aluminum, with no vertical paneling to enclose the foot wells and no solid walls at the rear of each bleacher structure (both of which would provide some shielding effects). The future stadium noise was modeled using SoundPLAN (ver 7.1) analysis software. The L_{eq} results from Table 5.10-14 were used as a basis for aggregate, averaged sound levels that would be produced at the stadium. The modeling took into account the complex topographical characteristics of the area, which would provide considerable sound attenuation (due to barrier effects) for receptors having hillsides or ridges between their properties and the stadium. The relative differences

5. Environmental Analysis

NOISE

between the key noise level metrics taken from the La Quinta reference measurements were applied to the modeling results. The modeling was conducted at several representative locations throughout adjacent area, as shown on Figure 5.10-2, *Noise Modeling Locations*.¹ These modeling locations are from 1,400 feet at the closest receptors (location J) to over 5,975 feet (1.1 miles) to the center of the tract of homes off of Quail Valley Road and Heather Lane (location T).

The sound levels from the open stadium are predicted to be in the range of 35 to 45 dBA L_{eq} along the eastern site boundary; to the northeast, stadium noise would experience significant barrier attenuation from the campus buildings; along the south boundary, predicted noise levels range between 30 to 50 dBA L_{eq} , primarily depending on elevation changes and distance from the stadium. Given the increasing elevations to the west and north (beyond the project site), stadium noise will be rapidly attenuated due to distance and ridgeline barrier effects.

The results of the predictive noise modeling at key receptor locations are summarized in Table 5.10-15 as shown on Figure 5.10-3, *Stadium Noise Level Contour Map*.² This table shows that stadium noise would increase ambient noise levels in the vicinity of the stadium, but only at the very closest receptor locations to the south (near the intersection of Romero Canyon Road and Baringer Road: modeling location J and measurement location 2). At these three to five residences, sound levels during full-capacity stadium activities may be clearly audible over the relatively quiet ambient conditions. At modeling location J, the calculated increases are 4.6, 4.6, and 3.1 dB for the minimum, energy-average, and maximum noise level metrics, respectively. Although noise may be clearly audible and discernible for short periods during games or other full-capacity events at modeling location J at 55 dBA L_{max} , stadium noise would not exceed the Los Angeles County Noise Ordinance of 70 dBA daytime and 65 dBA nighttime; therefore, stadium noise would be less than significant. Even though stadium noise at location J would be less than significant, noise reduction design features are available and may be installed during construction of the stadium; these include:

- 1) blocking off of the entire back of the south bleacher structure.
- 2) installing an increased number of localized PA loudspeakers instead of fewer centralized speakers.



¹ In Figure 5.10-2, modeling locations A, C, and D are beyond the extent of the analysis window and would have sound levels comparable to or below those for the most distant locations (i.e., locations P through T).

² In Figure 5.10-3, point receiver locations A, B, C, D, and E are beyond the extent of the analysis window and would have sound levels comparable to or below those for the most distant locations (i.e., locations P through T).

5. *Environmental Analysis*

NOISE

This page intentionally left blank.

5. Environmental Analysis

NOISE

**Table 5.10-15
Stadium Noise**

Modeling Receiver Location	Predicted Stadium Sound Level Contributions, dBA			Measured Ambient Sound Levels, dBA ²			Future Sum of Ambient plus Stadium, dBA ³			Calculated Change due to Stadium, dB		
	<i>L_{min}</i> Estimated ¹	<i>L_{eq}</i> Modeled	<i>L_{max}</i> Estimated ¹	<i>L_{min}</i>	<i>L_{eq}</i>	<i>L_{max}</i>	<i>L_{min}</i>	<i>L_{eq}</i>	<i>L_{max}</i>	<i>L_{min}</i>	<i>L_{eq}</i>	<i>L_{max}</i>
B	<15	22.2	34.7	27.1	37.2	52.3	27.4	37.3	52.4	0.3	0.1	0.1
E	<15	<15	27.5	30.9	47.3	61.6	31.0	47.3	61.6	0.1	0.0	0.0
F	<15	18.7	31.2	30.9	47.3	61.6	31.0	47.3	61.6	0.1	0.0	0.0
G	18.4	28.4	40.9	30.9	47.3	61.6	31.1	47.4	61.6	0.2	0.1	0.0
H	<15	24.3	36.8	30.9	47.3	61.6	31.0	47.3	61.6	0.1	0.0	0.0
I	16.6	26.6	39.1	27.1	37.2	52.3	27.5	37.6	52.5	0.4	0.4	0.2
J	29.9	39.9	52.4	27.1	37.2	52.3	31.7	41.8	55.4	4.6	4.6	3.1
K	<15	<15	27.5	36.1	45.2	55.8	36.1	45.2	55.8	0.0	0.0	0.0
L	22.1	32.1	44.6	36.1	45.2	55.8	36.3	45.4	56.1	0.2	0.2	0.3
M	27.6	37.6	50.1	36.1	45.2	55.8	36.7	45.9	56.8	0.6	0.7	1.0
N	18.6	28.6	41.1	36.1	45.2	55.8	36.2	45.3	55.9	0.1	0.1	0.1
O	<15	21.9	34.4	36.1	45.2	55.8	36.1	45.2	55.8	0.0	0.0	0.0
P	<15	<15	27.5	32.7	44.6	55.7	32.8	44.6	55.7	0.1	0.0	0.0
Q	<15	<15	27.5	32.7	44.6	55.7	32.8	44.6	55.7	0.1	0.0	0.0
R	<15	<15	27.5	32.7	44.6	55.7	32.8	44.6	55.7	0.1	0.0	0.0
S	<15	<15	27.5	32.7	44.6	55.7	32.8	44.6	55.7	0.1	0.0	0.0
T	<15	<15	27.5	32.7	44.6	55.7	32.8	44.6	55.7	0.1	0.0	0.0

Source: SoundPLAN 7.1 and input data from La Quinta High School noise monitoring.

¹ The minimum and maximum for the project stadium were estimated using the respective differentials from the La Quinta High School noise monitoring.

² The existing conditions levels in plain text are from measurement locations that are very near the modeling locations. Those values in *italics* are estimated from comparable measurement locations.

³ This is the predicted energy sum of the stadium noise contributions added to the measured, existing noise environments.

5. Environmental Analysis

NOISE

This page intentionally left blank.

5. Environmental Analysis

NOISE

The next highest predicted increases are for houses along the ridgeline represented by modeling locations L, M, and N, which would experience future noise level increases of 1 dB or less. Although these residences are along the top of a ridgeline, there is a taller ridgeline between these locations and the project site that provides substantial shielding. These residences also have a higher ambient noise environment (compared to the quietest location, measurement site 2), so the difference between the existing and future conditions is less pronounced (than at closest modeling location J). All other modeled locations are predicted to have negligible increases to their noise environments from the activities at the proposed stadium. This is due to a combination of long propagation distances, ground attenuation over those distances, increased air absorption of sound energy, and, often, several intervening topographical features that would block the sound from the project site.

The highest future average noise levels would be approximately 47 dBA at modeling locations E, F, G, and H (mostly along Romero Canyon Road). With relatively low exterior levels, plus the typical minimum noise reduction of 12 dBA with windows open and 24 dBA reduction with windows closed, interior noise levels at the closest residences would not exceed 45 dBA L_{eq} .

The associated future L_{max} levels at these locations would remain at approximately 62 dBA with 0 dB increase due to the stadium events. This latter result is below the Los Angeles County standards for maximum sound levels for both the L_{max} 70 dBA daytime and 65 dBA nighttime. Thus, noise impacts would be less than significant from stadium events, even for full-capacity stadium events that last longer than 10 PM when noise standards are stricter.

IMPACT 5.10-4 LONG-TERM OPERATION-RELATED NOISE WOULD NOT EXCEED LOCAL STANDARDS. [THRESHOLDS N-1 AND N-3]



Impact Analysis: The project-related stationary noise sources include athletic field use, the school bell between classroom periods, and parking lot noise. The following describes the impacts from stationary noise sources at the proposed Castaic High School:

Daytime, After-School, and Weekend Use of Athletic Fields and Hardcourts

The proposed project would install outdoor athletic facilities that include a football stadium (with track and field features), two baseball fields, two softball fields, a multipurpose/practice field, a soccer pitch, eight basketball courts, and six tennis courts. These multiuse athletic venues would be used during the daytime (for high school physical education classes), during the late afternoon and evening (for after-school athletic team training), and during the weekend (for other community-based athletic activities). In addition, the stadium would host various school and community events, including athletic (e.g., football games and track meets) and other activities (e.g., team practices, band practices, and other co-academic functions).

Daytime Use of Athletic-Fields (Long-Term)

Multiple sports fields would be used simultaneously for physical education classes (during the school day between the hours of 8:00 AM and 3:00 PM). The total number of students on the fields during the day would be a small fraction of the number of people attending a full-capacity stadium event (analyzed under Impact 5.10-3). This difference alone would result in at least a 10 dB reduction in noise between athletic field usage

5. Environmental Analysis

NOISE

and a stadium event.³ Also, several other factors would reduce noise, as compared to a stadium event, including:

- A lack of a large PA system (although there may be individual-scale bull-horn usage).
- These activities will be at near-ground level (not elevated as in the stadium).
- Additional sound propagation pathways over sound-absorptive grass.
- Additional barrier attenuation effects provided by the buildings on the main portion of the campus.
- Additional distances to facilitate spreading loss attenuation. (For example, the JV baseball field is an additional 725 feet farther away from modeling location J than is the center of the stadium. This distance factor alone will provide at least an additional 3 dB of distance attenuation.)

These acoustical factors are expected to yield sound levels that are at least 15 to 25 dB below the emissions of the stadium, depending on the activity location and number of participants. Given the results of the stadium noise event situation, noise from the daytime use of athletic fields at the proposed high school will not exceed any noise limit thresholds and will probably be completely inaudible at all offsite receptors the vast majority of the time. Noise generated during daytime use of the athletic fields would be less than significant.

After-School Sports Programs (Long-Term)

After-school sports programs hosted by the school district that would be held outdoors would include freshman, junior varsity, and varsity athletic programs:

- Cross Country (fall)
- Football (fall)
- Tennis (women's: fall, men's: spring)
- Soccer (winter)
- Track and Field (spring)
- Baseball (spring)
- Softball (spring)

After-school sports programs are seasonal. In general, the fall season extends from September to mid-November, the winter season extends from mid-November to mid-February, and the spring season extends from mid-February to May. After-school athletics activities hosted at the high school campus would include practice activities and competitive games. Varsity football games are generally held on Thursday or Friday nights after 7:00 PM, but would be expected to be completed by or about 10 PM. These varsity football games were analyzed in the stadium event noise situation (see the discussion under Impact 5.10-3).

For all the other after-school activities, the expected number of participants (athletes, coaches, officials, and/or observers) would be roughly comparable to the daytime activities scenario discussed immediately above. That is, noise levels could be expected to yield sound levels that are at least 10 to 20 dB below the emissions of the stadium, depending on the activity location and number of participants. Given the results of

³ For example, 500 people using the athletic fields, compared to 5,000 people in the stadium bleachers would be a fraction of $\frac{500}{5,000}$ or $1/10$, which is an acoustical reduction of 10 dB due to the size of the aggregate noise source.

5. Environmental Analysis

NOISE

the stadium noise event situation, noise from the after-school use of athletic fields at the proposed high school would not exceed any noise limit thresholds and would probably be completely inaudible at all offsite receptors the vast majority of the time. Noise impacts for this activity would be less than significant and would not require any mitigation.

Community Use of Sports Fields by Youth Organizations (Long-Term)

In addition to weekday use of the athletic fields and hardcourts for physical education classes and after-school athletic programs, youth organizations within the community of Castaic and other surrounding communities would have the opportunity to utilize onsite facilities on the weekends and after hours, as feasible. The District may work collaboratively with the nearby cities and communities to establish community use of the high school athletic field and related improvements to help accommodate demand for sports fields/courts. For the purposes of the noise analysis, assuming a worst-case scenario, athletic fields/courts at the high school may be available as feasible for use by youth sports organizations on the weekends and during the summer (weekdays and weekends). Youth organizations that currently use other District facilities would potentially use the project facilities for games and/or practice. Potential youth organizations include Youth Basketball, Junior All American Football, the American Youth Soccer Organization (AYSO), Little League, and the American Softball Association. Weekend/summer sports activities would generally occur during the morning (8:00 AM) and would continue until sunset (8:00 PM during the summer months and 5:30 PM during the winter months) throughout the school year and summer months. Youth organizations would use the soccer, football, and baseball fields in the eastern portion of the campus. Basketball practice and games would occur indoors and would therefore not contribute to the exterior noise environment.

Since the usage for a community-based athletic event would be expected to be very similar to the conditions for a school-based athletic event (e.g., a Little League game would be similar to a high school varsity baseball game and an AYSO soccer match would be similar to a high school varsity soccer match), the expected noise emissions into the community associated with either school-based or community-based activities would be very similar. Given the discussion above, noise from the community use of athletic fields at the proposed high school would not exceed any noise limit thresholds and would probably be completely inaudible at all offsite receptors the vast majority of the time. Noise impacts for this activity would be less than significant and would not require any mitigation.



School Bells

Operation of the proposed high school would include the use of buzzers or bells to signal the beginning and ending of classes. Noise generated by the buzzers or bells would occur for a short duration and would not substantially elevate average daytime noise levels due to the very long distances from the school site to the community receptors.

Additionally, bells generally would not sound before or after school hours. Because buzzers or bells at the high school would be of short duration, less than 30 seconds in any one hour of the school day, and would not substantially elevate the daytime noise environment, noise from use of buzzers and bells would have less than significant noise impacts.

Parking Lots

Five separate onsite paved parking lots are planned for the proposed high school. The five parking lots would provide 868 parking spaces. The main student/visitor parking lot would be on the northeastern portion of the site near the main access route off Canyon Oak Road and provide 360 parking spaces. There would be two staff/event parking lots—one to the north and one to the south of the student/visitor parking lot. The

5. Environmental Analysis

NOISE

northern lot would provide 173 parking spaces and the southern lot would provide 143 parking spaces. The remaining two parking lots in the southern portion of campus would primarily serve as event parking and would provide 129 and 63 parking spaces. In addition to the onsite paved parking lots, the two areas east and south of the main campus designated Retention Basins A₁ and A₂ would be used as overflow event parking, as necessary.

Typical school parking lot noise sources include car horns, car engines, brakes and tires, automatic lock beeps, car alarms, car radios, door slams, and chatter. The most disruptive of these noise sources would be car alarm noise and horns. Each of these individual noise sources lasts for a short duration, and the highest magnitudes of noise would occur primarily at the beginning and end of the school day, when parking lots are most active. However, for the majority of the time, parking lots at the school would be minimally active because there is minimal mid-day and after-hours school-related traffic on a typical school day. In addition, there are no immediate noise-sensitive receptors near the proposed parking lots. The nearest noise-sensitive receptor would be the a single-family residence south of the project site at Romero Canyon Road and Baringer Road (location J) at approximately 1,100 feet from the 129-space event parking lot. This distance would attenuate parking lot noise to a level where it would not be readily distinguishable from the ambient noise environment at the single-family home. While the designated overflow event parking areas may be closer than the paved parking lots by up to a few hundred feet, their use would be infrequent. Therefore, noise associated with the parking lots would not substantially increase the ambient noise environment, and noise impacts from parking lots would be less than significant.

Lunch Period

Students at the proposed high school have the opportunity to have lunch outdoors in the school courtyard area. Several hundred students could be outdoors in the central area of the campus at any one time. They would generate noise levels similar to those of outdoor activities, because the primary noise during both would be students talking. The courtyard is in the central portion of the building cluster on the proposed campus, surrounded by school classroom structures, the gymnasium, the performing arts center, and the main administration/library/science building, all of which would attenuate noise levels. The campus's amphitheater/courtyard area (where the majority of students eating lunch outdoors would be expected) is approximately 2,100 feet (640m) or more away from the nearest residence (to the south). The distance attenuation to this receptor location would be substantial (on the order of 60 dB of reduction), as would the barrier effects from the multistory gymnasium. Furthermore, the lunch period would only occur for a short period in the school day. Noise generated during outdoor lunch activities would therefore not substantially increase noise levels at noise-sensitive uses surrounding the campus, and noise impacts during the lunch period would be less than significant.

Outdoor Band Practice

It is anticipated that the school band would practice outdoors after school and in the evening during football season, marching on the football practice field after football practice. Outdoor band practice at the high school may potentially be discernible for short periods at the closest residences around the school (due to the recognition aspect for music). The majority of the school year, though, it is anticipated that band practice would be held indoors.

Based on the analysis for the stadium event (which included a band during half-time), noise from outdoor band practice would be much less than for a full stadium event (which would include sound contributions from PA announcements, cheering, and other attendee activities). Thus, outdoor band practice at the proposed high school would not exceed any noise limit thresholds and would probably be inaudible at most

5. Environmental Analysis

NOISE

or all offsite receptors the vast majority of the time. Noise impacts for this activity would be less than significant and would not require any mitigation.

IMPACT 5.10-5: THE PROJECT WOULD NOT CREATE SIGNIFICANT GROUNDBORNE VIBRATION AND GROUNDBORNE NOISE. [THRESHOLD N-2]

Impact Analysis: Operation of the project would not generate substantial levels of vibration due to the lack of vibration-generating sources, and therefore it is not analyzed below. Construction activities generate varying degrees of ground vibration, depending on the construction procedures, construction equipment used, and proximity to vibration-sensitive uses. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. Ground vibrations from construction activities rarely reach levels that can damage structures, but can achieve the audible and perceptible ranges in buildings close to a construction site.

Vibration-Induced Structural/Architectural Damage

Building damage is not a factor for normal projects, with the occasional exception of blasting and pile-driving during construction (FTA 2006). According to Caltrans, extreme care must be taken when sustained pile driving occurs within 25 feet of any building. However, the threshold at which there is a risk of architectural damage to normal houses with plastered walls and ceilings is 0.2 inch per second (Caltrans 2002). Project-related construction vibration from construction of the main campus and access roads was evaluated for its potential to cause minor architectural damage based on FTA's architectural damage criteria.

Main Campus

The nearest offsite structure to construction activities would be the single-family residence to the south near Romero Canyon Road and Baringer Road. This home would be approximately 375 feet from the nearest potential grading area and approximately 1,900 feet from the center of the main campus construction area. Because vibration dissipates quickly with distance, the maximum construction-related vibration level would be 0.02 inch per second, which is well below the 0.2 inch per second criteria for vibration-induced architectural damage at the nearby structures. Therefore, architectural-damage vibration impacts would be less than significant.

Access Roads

Development of the project would require construction of two access roads into the project site from the existing arterials. Canyon Hill Road, the primary access road to the proposed school, would extend from the existing Sloan Canyon Road and connect at the northeast entrance of the site. The existing Romero Canyon Road would be improved and serve as the secondary access road, providing access from the south. Roadway construction would include grading, foundation work, and asphalt paving that would extend beyond the project site boundary into the surrounding properties. In addition to construction of Canyon Hill Road and the planned improvements to Romero Canyon Road, the existing section of Sloan Canyon Road starting from Quail Valley Road would also be improved.

Project-related construction vibration was evaluated for its potential to cause architectural damage in comparison to the FTA's architectural damage criteria, which is 0.2 inch per second for wood-framed structures (FTA 2006). Table 5.10-16 lists the estimated range in ground vibration levels that would be expected during construction at the closest building to construction equipment. Only construction equipment generating extremely high levels of vibration, such as pile drivers, has the potential for vibration-induced structural damage, and these are not anticipated for this project. Levels of vibration produced by



5. Environmental Analysis

NOISE

construction equipment are evaluated against the FTA's significance threshold for vibration-induced architectural damage of 0.2 in/sec for wood-framed buildings.

Table 5.10-16
Vibration Induced Structural Damage (inch/sec)

<i>Equipment</i>	<i>Within 30 Feet</i>	<i>Within 50 Feet</i>	<i>Within 100 Feet</i>
Vibratory Roller	0.160	0.074	0.026
Large Construction Equipment ¹	0.068	0.031	0.011
Small Construction Equipment ²	0.002	0.001	0.004
Loaded Trucks	0.058	0.027	0.010
Threshold (inch/sec)	0.2 inch/sec	0.2 inch/sec	0.2 inch/sec
Exceeds Threshold?	No	No	No

Source: Federal Transit Administration 2006. Based on the average distance construction equipment would be operating from vibration-sensitive receptors.

¹ Based on vibration levels from a large bulldozer.

² Based on vibration levels from a small bulldozer.

Based on the design of the proposed access roads, the location of the nearest structures are a minimum of 30 feet from the right of way of the northern access road, and at a minimum distance of 50 feet from the southern access road. Using the methodologies recommended by the FTA, the operation of heavy equipment would not cause vibration levels to exceed the FTA threshold of 0.2 inch/sec. Therefore, vibration-induced impacts to the nearby structures would be less than significant.

Vibration Annoyance

Vibration is typically noticed nearby when objects in a building generate noise from rattling windows or picture frames. It is typically not perceptible outdoors (FTA 2006), therefore, impacts are based on the distance to the nearest building. The effect on buildings near a construction site varies depending on soil type, ground strata, and receptor building construction. The generation of vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight damage at the highest levels. The following evaluates the potential for vibration annoyance related to construction activities at the main campus, and at the construction of project access roads.

Main Campus

Table 5.10-17 shows vibration levels from construction equipment operating at the project site at the nearest vibration-sensitive receptor. As discussed above, the nearest offsite structure to construction activities would be the single-family residence to the south near Romero Canyon Road and Baringer Road. This home would be approximately 375 feet from the nearest potential grading area and approximately 1,900 feet from the center of the main campus construction area. Because vibration dissipates quickly with distance, the maximum construction-related vibration level would be 72 VdB, which is less than the 78 VdB criteria for vibration-induced annoyance at the nearby homes. Therefore, vibration impacts related to annoyance would be less than significant.

5. Environmental Analysis

NOISE

Access Roads

Development of the project would require construction of two access roads into the project site. Table 5.10-17 lists representative types of construction equipment that are sources of vibration, as well as estimated vibration levels that would be experienced at the nearest structures from construction of the proposed project. RMS vibration velocities from construction equipment operations are based on FTA's "Transit Noise and Vibration Impact Assessment." Levels of vibration produced by construction equipment are evaluated against the level of vibration considered to be barely perceptible for vibration annoyance of 78 VdB for residential and institutional structures during the daytime (FTA 2006).

Table 5.10-17
Vibration Annoyance

<i>Equipment</i>	<i>Within 30 Feet</i>	<i>Within 50 Feet</i>	<i>Within 100 Feet</i>
Vibratory Roller	92	88	82
Large Construction Equipment ¹	85	81	75
Small Construction Equipment ²	56	52	46
Loaded Trucks	84	80	74
Threshold (VdB)	78	78	78
Exceeds Threshold?	Yes	Yes	Yes

Source: Federal Transit Administration 2006. Based on the average distance construction equipment would be operating from vibration-sensitive receptors.

¹ Based on vibration levels from a large bulldozer.

² Based on vibration levels from a small bulldozer.



Peak vibration levels occur when construction equipment operates directly adjacent to the property line. Vibration levels from a vibratory roller would exceed the vibration annoyance level up to 150 feet from a vibration-sensitive receptor location. Other large construction equipment, such as graders and scrapers, would be unnoticeable within 100 feet away. As construction moves along the road, vibration levels at each affected home would diminish rapidly with distance and become unnoticeable. Although the operation of heavy construction equipment would have the potential to cause vibration levels that exceed the vibration annoyance criteria, peak vibration events would occur infrequently and would be limited to construction daytime hours, which are the least sensitive portions of the day.

Vibration levels associated with certain construction activities could be perceptible; however, impacts would be less than significant because vibration-intensive work would occur infrequently throughout the day and construction equipment would be distributed throughout the linear project site.

IMPACT 5.10-6: CONSTRUCTION ACTIVITIES WOULD RESULT IN SIGNIFICANT TEMPORARY NOISE INCREASES. [THRESHOLD N-3]

Impact Analysis: Noise levels associated with construction activities would be higher than the ambient noise levels in the project area today, but would subside once construction of the proposed project is completed. Two types of short-term noise impacts could occur during construction: (1) mobile noise from transport of workers and material deliveries and (2) stationary construction noise from use of onsite construction equipment. The following analysis describes construction noise impacts of the project.

5. Environmental Analysis

NOISE

Mobile Sources of Short-Term Construction Noise

The transport of workers and equipment to the construction site would incrementally increase noise levels along site access roadways. Even though there would be a relatively high single-event noise exposure potential with passing trucks, a maximum noise level of 86 dBA at 50 feet (Caltrans 2009), it is anticipated that construction activities could generate a few trips related to construction workers and vendor trucks driving to the site, and eight soil haul round-trips per day during grading activities. The worker trips, vendor trips, and truck trips would be spread throughout the workday. The low volume of project-related construction worker and vendor trips would be negligible compared to the existing traffic volumes on Sloan Canyon Road and Romero Canyon Road. Due to the low volume of project-related construction vehicle trips, average noise levels associated with these trips compared to existing traffic noise would be minimal and not discernible. Therefore, these impacts are less than significant at noise receptors along the construction routes.

Onsite Sources of Short-Term Construction Noise (both onsite and roadway)

Construction is performed in distinct steps, each with its own mix of equipment and, consequently, its own noise characteristics. Noise generated during construction is based on the type of equipment used, the location of the equipment relative to sensitive receptors, and the timing and duration of the noise-generating activities. However, despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise to be categorized by work phase.

The dominant noise source from most construction activities is the engine, and noise levels from construction activities are dominated by the loudest piece of construction equipment. Due to the large scope of the proposed project, construction noise levels were estimated based on noise levels from construction phases that would occur on the main campus site and the access roads. The following describes the noise level estimates at nearby receptors from construction activities at the main campus, and along the access roads.

Main Campus

Average noise levels from project-related construction activities associated with the main campus site were calculated from use of all applicable construction equipment and are shown in Table 5.10-18. Overall, project-related construction activities would take approximately 2.5 years to complete.

As shown in the table, average construction noise levels would range from 16 to 52 dBA L_{eq} . The majority of construction-related noise contributions would be comparable to or below the existing ambient conditions, with the exception of the closest residential areas to the south of the project site (represented by modeling location J), which could experience intermittent sound levels as much as 15 dB above the quiet, existing sound environment depending on the location of the construction equipment at the project site, the equipment power settings, the specific type of work being conducted, and the moment-to-moment ambient conditions around any given receptor house.

5. Environmental Analysis

NOISE

Table 5.10-18
Predictive Noise Modeling Results for Onsite Construction Activities

Modeling Receiver Location	Measured Ambient Sound Levels, dBA L_{eq} ¹	Predicted High School Construction Sound Level Contributions, dBA L_{eq}	
		Grading/Clearing Phase	Building/Erection Phase
B	37.2	38.2	35.0
E	47.3	31.6	22.1
F	47.3	40.8	37.3
G	47.3	43.8	39.1
H	47.3	43.5	34.4
I	37.2	43.3	39.9
J	37.2	52.4	41.2
K	45.2	36.4	29.3
L	45.2	47.4	43.2
M	45.2	49.3	44.3
N	45.2	46.2	43.3
O	45.2	40.9	38.9
P	44.6	29.0	23.5
Q	44.6	35.7	30.8
R	44.6	25.4	18.8
S	44.6	20.5	15.7
T	44.6	32.9	21.8

Source: Noise modeling using SoundPLAN 7.1 using outputs from FHWA Roadway Construction Noise Model (RCNM) for aggregate construction activity by phase.

¹ Measured ambient sound levels in non-italic values are from measurement locations; italic values are estimated from comparable measurement locations.



As the highest predicted levels are no more than 52 dBA L_{eq} , no receptor locations around the project site would exceed the County's construction noise standard of 60 dBA L_{eq} for the period between 7:00 AM to 8:00 PM. The project would comply with the county's limitation on the noise levels and hours in which construction activities can occur (7:00 AM to 8:00 PM); the least noise sensitive portions of the day. Onsite construction noise would be less than significant.

Access Roads

The proposed project would include the construction of access roads. Two scenarios are being considered:

- Scenario 1 would construct a northern access road extending Sloan Canyon Road to the project site with 4 lanes and a pavement width of 52 feet.
- Scenario 2 would construct a northern access road extending Sloan Canyon Road to the project site with 2 lanes and a pavement width of 40 feet, and a southern access road expanding Sloan Canyon Road and connecting it to Romero Canyon Road with a 2-lane road and a pavement width of 28 feet.

5. Environmental Analysis

NOISE

The operation of construction equipment and haul trucks would have the potential to generate temporary noise increases above the existing ambient noise levels at the nearest residential areas immediately adjacent to the proposed access roads along Sloan Canyon Road east, Canyon Hill Road, Sloan Canyon Road South, and Barringer Road. Roadway construction would take approximately 27 months and would require the use of heavy construction equipment, including excavators, loaders, and several dump trucks, among others. Noise generated during construction is based on the type of equipment used, the location of the equipment relative to sensitive receptors, and the timing and duration of the noise-generating activities. Typically, the estimated construction noise levels are governed primarily by equipment that produces the highest noise levels.

For linear construction, such as a roadway, construction noise is assessed from the centerline of the alignment. Noise levels generated by construction equipment at various distances are shown in Table 5.10-19. Noise levels diminish rapidly with distance from the construction site (approximately 6 dB per doubling of distance). Construction may occur as close as 25 feet from the center of the roadway alignment and immediately adjacent to the existing residences' front yards. Construction would not be adjacent to any single residence for more than a few days because the project would proceed down the road. As the center of construction activity moves, the impacts of construction noise at a single residence diminish with distance. For example, assuming that an excavator, a loader and a dump truck are operating simultaneously in an area affecting a given home, a noise level of 80 dBA 50 feet from the noise source would be 74 dBA at 100 feet from the source and reduced by another 6 dBA (to 68 dBA) at 200 feet from the source. As shown in the table below, individual pieces of construction equipment would generate noise levels ranging from 60 dBA L_{eq} at 500 feet to 86 dBA L_{eq} at 25 feet.

Table 5.10-19
Predictive Noise Results for Roadway Construction Activities

Equipment	Distance from Construction Activities				
	25 Feet	50 Feet	100 Feet	200 Feet	500 Feet
Excavator	82.8	76.7	70.7	64.7	56.7
Loader	81.2	75.1	69.1	63.1	55.1
Dump Truck	78.5	72.5	66.5	60.4	52.5
Combined	85.9	79.9	73.9	67.8	59.9

Source: FHWA Roadway Construction Noise Model (RCNM). Noise levels shown in dBA L_{eq} .

While the magnitude of the noise would, at times, be up to 85.9 with a grader, a loader, and a dump truck operating at the same time in the part of the site, it would fluctuate throughout the workday because equipment would not be in use at one location for an extended period of time. The closest residential building is approximately 25 feet from the road, so the maximum noise level that may be heard intermittently (with the assumed equipment operating in the same place) at nearby building would be 85.9 dBA L_{eq} . The ambient noise levels at receptors that would be affected by roadway construction ranges from 37.2 to 56.2 dBA L_{eq} . Construction noise would subside as construction activities move farther along the roadway. However, at a given receptor it would result in a substantial noise increase, even when construction occurs at distances 500 feet away.

For construction of the access road (not for campus construction), substantial temporary noise increases would occur at residential receptors along the roadway segments, even when construction occurs at distances 500 feet away. Because the noise exposure due to roadway construction would result in a substantial noise increase during the construction period, and because roadway construction would last for a long period of up to 27 months, construction noise is considered a significant impact.

5.10.4 Existing Regulations and Standard Conditions

State

- California Green Building Standards, Title 24, Part 11, California Code of Regulations. The new 2010 Green Building Code, which is Part 11 of the California Code of Regulations, Title 24, requires all interior noise levels in classrooms due to exterior noise shall not exceed 45 dBA CNEL.

County

- Los Angeles County Municipal Code. Title 12 Environmental Protection, Chapter 12.08 Noise Control

5.10.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions, the following impacts would be less than significant: 5.10-2, 5.10-3, 5.10-4, 5.10-5, and 5.10-6 (campus construction activities).

Without mitigation, the following impacts would be **potentially significant**:

- Impact 5.10-1 Project-related traffic would significantly increase noise along roadways.
- Impact 5.10-6 Construction activities would result in significant temporary noise increases.

Mitigation Measures Considered

In compliance with CEQA, “each public agency shall mitigate or avoid the significant effects on the environment of project it carries out or approves whenever it is feasible to do so” (Public Resources Code, Section 21002.1(b)). The term “feasible” is defined in CEQA to mean “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors” (Public Resources Code, Section 21061.1).

A number of measures were considered for mitigating or avoiding the noise impacts; however, no feasible mitigation measures are available that would reduce noise impacts to less than significant levels. The following is a brief discussion of the mitigation measures considered.

Impact 5.10-1. Project-related traffic would increase noise levels adjacent to roadways.

An increase in traffic levels along the segments would substantially increase the ambient noise environment in the vicinity of noise-sensitive receptors.

For the **single-access scenario**, potentially significant noise impacts would occur at noise-sensitive receptors along the following roadway segments:

- Sloan Canyon Road from The Old Road to 1 mile west of Quail Hill Parkway
- Parker Road from Sloan Canyon Road to I-5 southbound ramps
- The Old Road from Parker Road to Hillcrest Parkway

For the **multiple-access scenario**, potentially significant noise impacts would occur at noise-sensitive receptors along the following roadway segments:

- Sloan Canyon Road from The Old Road to Hillcrest Parkway
- Parker Road from Sloan Canyon Road to The Old Road.



5. Environmental Analysis

NOISE

The method for addressing excessive roadway noise is to explore the use of sound barrier walls. These were explored, but several factors make potential implementation of sound walls impractical, infeasible, or economically unrealistic. These factors include:

- Houses face the roadway and have access via driveways. Such configurations cannot have sound walls between the roadway and the house without cutting off the access to the property.
- Houses that back up to the roadway have existing tract separation walls. Raising the height of existing walls or constructing higher walls next to the existing walls would reduce some road noise but would not reduce noise to less than significant levels.
- For roadways that are higher than the adjacent homes (primarily along the dirt portions of Sloan Canyon Road), because of the distance between each home, a separate sound wall would have to be built for each property. Further, to be effective, the sound walls would need extensive dimensions (both length and height) that would cut off the residents from the natural open space they live in.
- For all segments, the school district does not have control over all roadway rights-of-way or the private property that these walls would have to be constructed on.

Consequently, no mitigation is feasible or practical to reduce roadway noise impacts to less than significant levels.

5.10.6 Mitigation Measures

Impact 5.10-1

No feasible mitigation measures are available.

Impact 5.10-6

N-1	Prior to award of construction contract, the School District school facilities project manager or their designee shall include all construction-related mitigation measures in bid documents.
N-2	Prior to start of grading on access roads, the School District school facilities project manager or their designee shall prepare a noise control plan that includes the following measures along with the Los Angeles County Noise Ordinance. The plan shall include the following measures: • All internal combustion engine-driven equipment shall have properly operating mufflers, air intake silencers, and engine shrouds that are appropriate for the equipment and that are no less effective than as originally equipped by the manufacturer. • Properly maintain and tune all construction equipment. • Locate all stationary noise sources (e.g., generators, compressors, staging areas) as far from noise-sensitive receptors as is feasible. • If stationary, noise-generating equipment must be located near existing residential properties, then such equipment shall have temporary acoustical enclosures, blanketing, or barriers to reduce the noise emissions.

5. Environmental Analysis

NOISE

- Use “quiet-design” air compressors and other stationary noise sources where such technology exists.
- Reduce nonessential idling of construction equipment to no more than five minutes.
- Designation of a member of the construction team who shall be responsible for responding to any complaints and questions about construction noise. A contact number shall be posted on the school district website.

5.10.7 Level of Significance After Mitigation

Impact 5.10-1

No feasible mitigation measures are available for the increases in traffic noise along some roadway sections; noise impacts would be significant and unavoidable.

Impact 5.10-6

Although implementation of Mitigation Measures N-1 and N-2 would reduce noise during construction of roadways, the noise levels would not be reduced to below significance thresholds. Construction of access roadways would, therefore, result in noise impacts at existing residential properties that are significant and unavoidable.



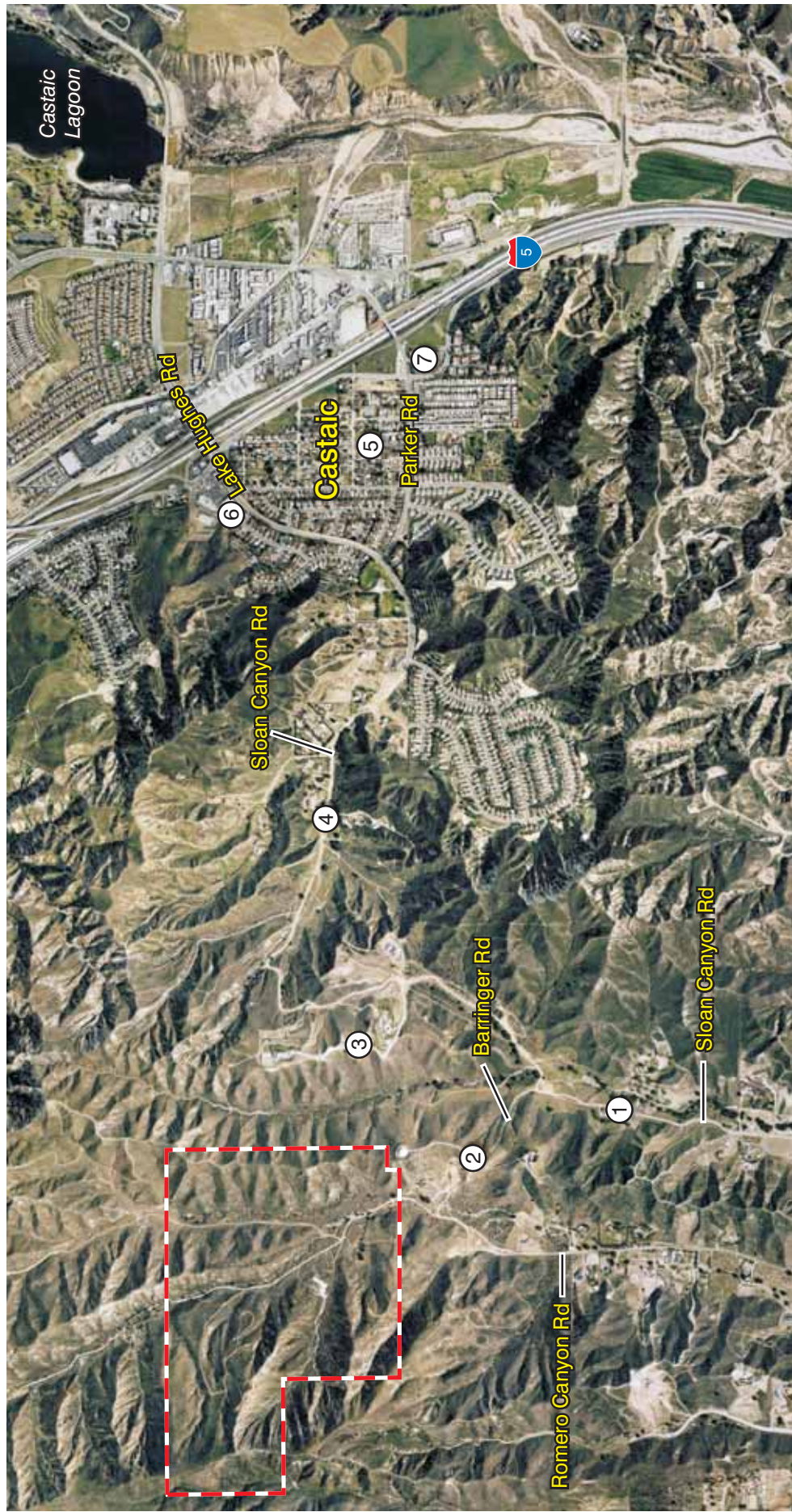
5. *Environmental Analysis*

NOISE

This page intentionally left blank.

5. Environmental Analysis

Noise Monitoring Locations



--- Property Boundary ① Noise Monitoring Locations

Source: Basemap from Google Earth Pro 2011

Castaic High School Draft EIR

5. *Environmental Analysis*

NOISE

This page intentionally left blank.

5. Environmental Analysis

Noise Modeling Locations



--- Property Boundary [B] Noise Modeling Locations ① Noise Monitoring Locations

Note: modeling locations A, C, and D are beyond the extent of the analysis window and would have sound levels comparable to or below those for the most distant locations (i.e., locations P through T).

Source: Basemap from Google Earth Pro 2011

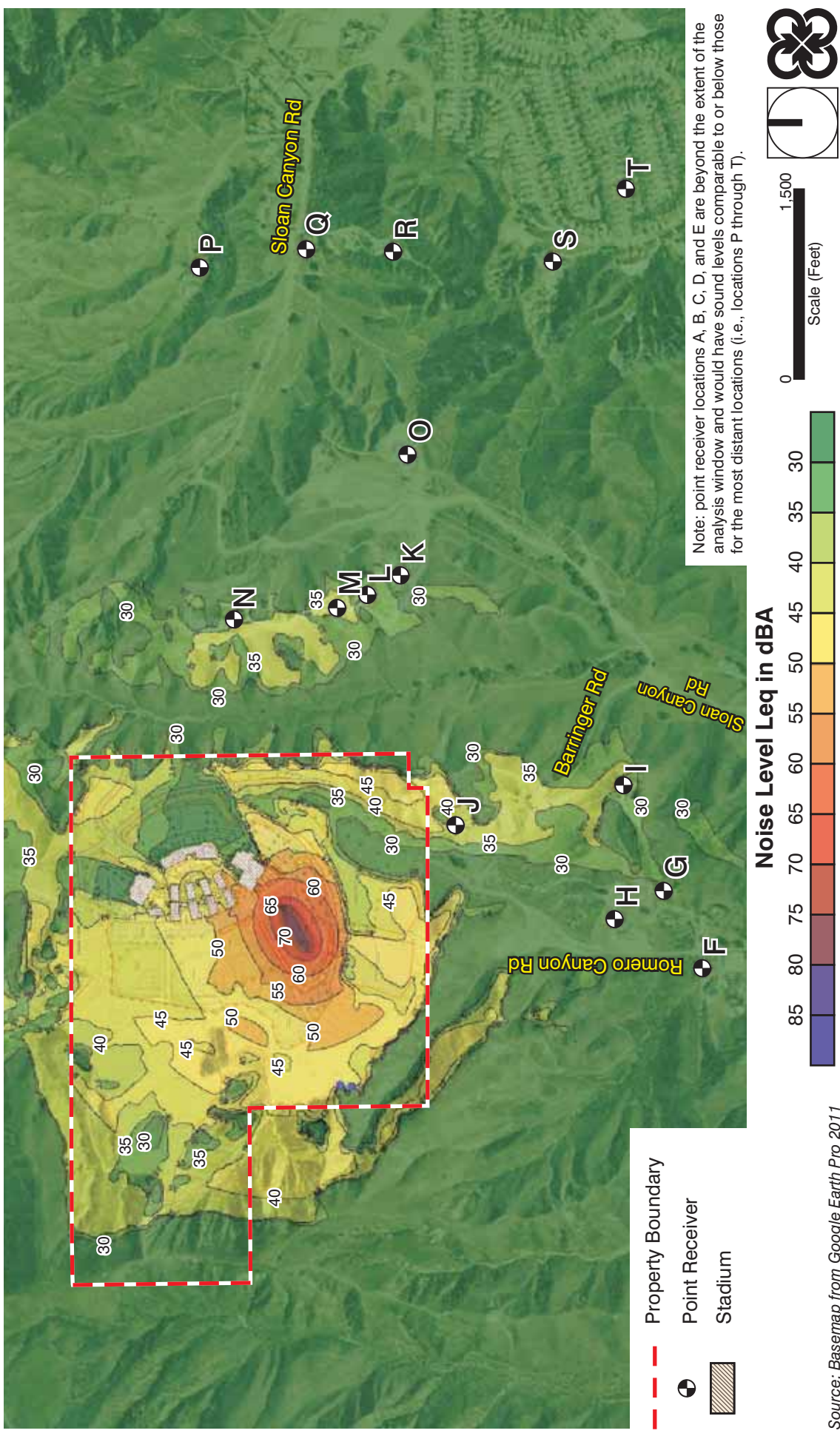
Castaic High School Draft EIR

5. *Environmental Analysis*

NOISE

This page intentionally left blank.

Stadium Noise Level Contour Map



Source: Basemap from Google Earth Pro 2011

Castaic High School Draft EIR

5. *Environmental Analysis*

NOISE

This page intentionally left blank.

5. Environmental Analysis

5.11 POPULATION AND HOUSING

This section of the Draft Environmental Impact Report (DEIR) examines the potential for population and housing growth impacts. The analysis in this section is based, in part, on the following sources of information:

- *Final Draft Santa Clarita Valley Area Plan*, Los Angeles County Department of Regional Planning, 2011.
- *One Valley One Vision Final Program EIR, Section 3.19: Population and Housing*, County of Los Angeles Area Plan, January 2012.
- *2012 Draft Growth Forecast*, Southern California Association of Governments.
- *2010 Census Summary Files for Castaic CDP* [Census-designated place], American Factfinder.

All figures are placed at the end of this section.

5.11.1 Environmental Setting

Population

Population information for the Community of Castaic and surrounding areas was obtained from two sources: the 2010 US Census and the Southern California Association of Governments (SCAG) 2012 Draft Growth Forecast for the Regional Transportation Plan. For comparison, information is also provided from the Los Angeles County Santa Clarita Valley Area Plan EIR.



2010 US Census

Census-designated places (CDPs) are concentrations of population in unincorporated areas that physically resemble incorporated places such as cities or towns and are designated by the US Census Bureau for statistical purposes. The west part of the project site is in the Hasley Canyon CDP; the Castaic CDP is about 1,000 feet east of the site; and a third CDP, Val Verde, abuts the south end of the Hasley Canyon CDP (see Figure 5.11-1, *Census-Designated Places near the Project Site*). The 2010 Census counted populations of 19,015 in the Castaic CDP, 1,137 in the Hasley Canyon CDP, and 2,468 in the Val Verde CDP, for a total of 22,620.

SCAG Growth Forecast

The population of the North Subregion of Los Angeles County in 2008 was 609,158. The North Subregion spans nearly half the county and includes the Santa Clarita Valley, the San Gabriel Mountains, Antelope Valley in the Mojave Desert, and the northern Transverse Ranges north of the Santa Clarita Valley. Population forecasts for the North Subregion for 2008, 2020, and 2035 are shown in Table 5.11-1.

5. Environmental Analysis

POPULATION AND HOUSING

Table 5.11-1
Population Forecast, SCAG

	2008	2020	2035	2008–2035	
				Increase	Percent Increase
North Subregion Total ¹	609,158	724,088	871,147	91,575	43.0%
North Subregion Unincorporated Area	139,497	173,377	231,072	261,989	65.6%

Source: SCAG 2012.

¹ Includes three incorporated cities in the North Subregion: Santa Clarita in the Santa Clarita Valley, and Palmdale and Lancaster in the Antelope Valley.

Santa Clarita Valley Area Plan

The Santa Clarita Valley Area Plan (SCVAP) has been recommended for approval by the Los Angeles County Regional Planning Commission, but has not yet been adopted by the Los Angeles County Board of Supervisors. The population of the Santa Clarita Valley was 212,611 in 2000 and was estimated at 252,000 in 2008. The population of the Santa Clarita Valley Area Plan (SCVAP) at buildout is forecast to be 460,000 to 485,000, with both estimates being more than double the 2000 population. Buildout of the Area Plan Land Use Map is conservatively estimated to occur by 2035.

Table 5.11-2
Population Forecast, SCVAP

	2008	2035	2008–2035	
			Increase	Percent Increase
Santa Clarita Valley Total	252,000	460,000 to 485,000	233,000 ¹	92.5% ¹
Santa Clarita Valley Unincorporated Area	75,000	237,387	162,387	217%

Source: LACDR2010.

¹ 2008–2035 comparison based on conservative 2035 forecast of 485,000.

Housing

2010 US Census

Housing units and households in the three CDPs near the project site are listed in Table 5.11-3. Forecast numbers of households for the North Los Angeles County Subregion are shown in Table 5.11-4.

Santa Clarita Valley Area Plan

Forecast numbers of households from the SCVAP are shown in Table 5.11-5.

5. Environmental Analysis

POPULATION AND HOUSING

Table 5.11-3
Housing Units and Households

Census-Designated Place	Housing Units			Vacancy Rate, percent	Average Household Size, persons
	Total	Occupied (Households)	Vacant		
Castaic	5,932	5,751	181	3.1%	3.29
Hasley Canyon	406	383	23	5.7%	2.97
Val Verde	715	671	44	6.2%	3.68
Total	7,053	6,805	248	3.5%	3.31

Source: USCB 2012.

Table 5.11-4
SCAG Households Forecasts: North Los Angeles County Subregion

				2008–2035	
				2008	2020
				2035	
				Increase	Percent Increase
North Subregion Total	185,775	221,175	265,919	80,144	43.1%
North Subregion: unincorporated area	41,744	52,779	71,690	29,946	71.7%

Source: SCAG 2012 Draft Growth Forecast.

Table 5.11-5
Santa Clarita Valley Area Plan Households Forecast

			2008–2035	
			2008	2035
			Increase	Percent Increase
Santa Clarita Valley total	80,000	150,000 to 155,000	75,000	93.8%
Santa Clarita Valley Unincorporated Area	23,000	76,000 ¹	53,000	230%

Source: LACDRP 2010.

¹ Pro-rated from forecast number of households and populations of entire plan area in 2035.

Employment

No employment data were available for the three CDPs near the project site.

SCAG

Forecast employment in the North Los Angeles County Subregion is shown in Table 5.11-6.

5. Environmental Analysis

POPULATION AND HOUSING

Table 5.11-6
SCAG Employment Forecast: North Los Angeles County Subregion

	2008	2020	2035	2008–2035	
				Increase	Percent Increase
North Subregion Total	205,765	244,779	307,143	101,378	49.3%
North Subregion Unincorporated Area	34,533	45,233	72,484	37,951	110%

Source: SCAG 2012 Draft Growth Forecast.

Santa Clarita Valley Area Plan

The total number of jobs in the Santa Clarita Valley in 2005 was estimated at 124,200. Forecasts of total employment in the Santa Clarita Valley in 2035 range from 217,910 to 286,254. Thus, estimated employment growth for the Santa Clarita Valley between 2005 and 2035 ranges from 93,710 to 162,054 jobs; the higher figure is a 130 percent increase over 2005 employment.

5.11.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

- PH-1 Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).
- PH-2 Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.
- PH-3 Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

The Initial Study, included as Appendix A, substantiates that impacts associated with Thresholds PH-2 and PH-3 would be less than significant. These impacts will not be addressed in the following analysis.

5.11.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts.

IMPACT 5.11-1: THE PROPOSED PROJECT WOULD NOT RESULT IN SUBSTANTIAL POPULATION GROWTH IN THE PROJECT REGION. [THRESHOLD PH-1]

Impact Analysis: Development of a high school for 2,600 students in Castaic would not induce growth in or near Castaic above the level of growth already planned. The proposed school is intended partly to relieve existing overcrowding at District high schools and partly to accommodate planned growth in the Castaic area.

5. Environmental Analysis

POPULATION AND HOUSING

Planned Growth in Castaic Region

Related projects listed in Table 3-1 would add 1,045 single-family residential units and an estimated 3,459 people to the area around the project site (based on an average household size of 3.31 persons). The generation rate used by the District for high school students in single-family homes is 0.2603 per residential unit. Thus, the 1,045 units are estimated to generate 272 high school students.

The project site is centrally located relative to the sites of approved or planned projects in the part of Castaic west of Interstate 5. Schools are usually built in response to growth and subsequent demand for school capacity, not before growth occurs. However, the population of unincorporated areas of the Santa Clarita Valley, including Castaic, is forecast to more than triple between 2008 and 2035. While no growth forecast for Castaic alone is available, there is clearly substantial growth anticipated in the region. The proposed school would be built in part to provide capacity for growth that is already planned; however, the school would not induce growth beyond that already planned.

Utility Extensions

The project would involve extensions of utilities—water main, sewer main, electricity distribution line, and natural gas distribution line—along either Canyon Hill Road or Harp Canyon Road, depending on which access route option is chosen for the school. Utility extensions are already required for other approved projects near the school site and will be built regardless of development of the school. Development of the school may cause the utility extensions to be installed earlier, but would have no bearing on their ultimate installation. Installation of utilities serving the school would not induce additional unplanned growth in the surrounding area.

Employment

Operation of the proposed high school would create approximately 175 faculty and staff jobs. The unemployment rate in Los Angeles County in February 2012 was 12.1 percent (EDD 2012). Therefore, it is expected that project employment would be absorbed from the local labor force rather than attract substantial numbers of new workers into the region.

5.11.4 Cumulative Impacts

Sixteen related projects were identified: fifteen residential projects and one elementary school, listed in Table 3-1. The proposed project is not part of a larger program of school construction and/or expansion by the District. The planned elementary school would be built and operated by the Castaic Union School District, which currently operates three elementary schools and one middle school. The estimated population increase due to the related residential projects, 3,459 persons, is well within current population forecasts for the Santa Clarita Valley (see Section 5.11.1 above). Thus, related projects would not cause a significant cumulative impact to population or housing.

While the related residential projects would directly cause residential growth in the region, schools are developed in response to growth and not before growth occurs. Therefore, the proposed high school would not contribute to a significant cumulative impact to population growth.

In consideration of the preceding factors, the project's contribution to cumulative population and housing impacts would be less than significant, and therefore project impacts would not be cumulatively considerable.

5. Environmental Analysis

POPULATION AND HOUSING

5.11.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, Impact 5.11-1 would be less than significant.

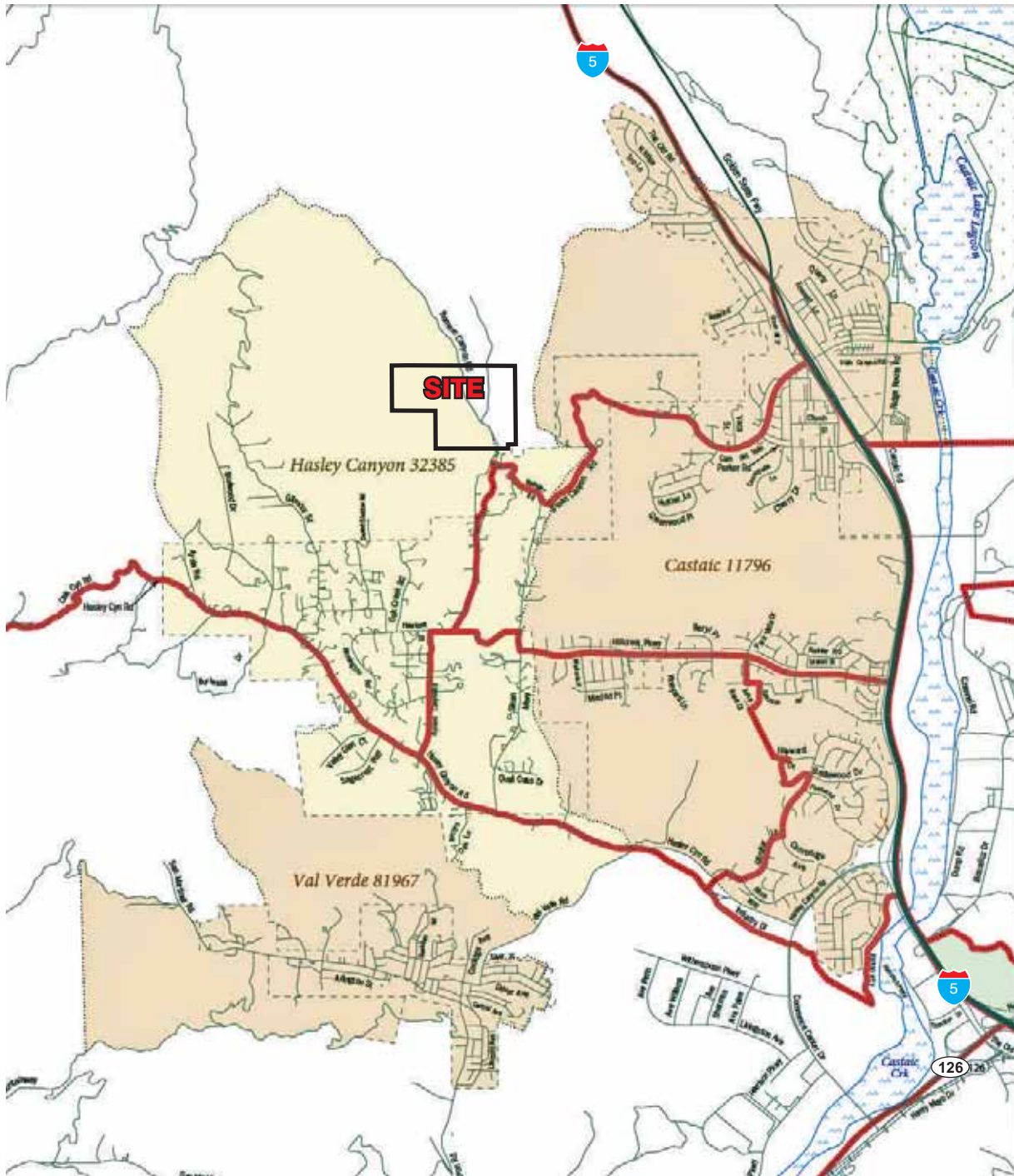
5.11.6 Mitigation Measures

No mitigation measures are required.

5.11.7 Level of Significance After Mitigation

Population and housing impacts would be less than significant.

Census-Designated Places Near the Project Site



— Census Tract Boundary

0 5,000
Scale (Feet)



Source: USCB 2012

Castaic High School Draft EIR

5. *Environmental Analysis*

POPULATION AND HOUSING

This page intentionally left blank.

5. Environmental Analysis

5.12 PUBLIC SERVICES

This section addresses public services including fire protection and emergency services, police protection, school services, and library services. Park services are addressed in Section 5.13, *Recreation*. Hazards related to wildland fires are discussed in Section 5.7, *Hazards and Hazardous Materials*, and are not discussed in this section.

5.12.1 Fire Protection and Emergency Services

5.12.1.1 Environmental Setting

The Los Angeles County Fire Department (LACoFD) provides fire protection and emergency services to the project site and surrounding area. Other services provided by LACoFD include fire prevention and urban search and rescue. The LACoFD also operates a Forestry Division and a Health Hazardous Materials Division. The community of Castaic is within the service boundaries of LACoFD Battalion 6. The nearest stations are Fire Station #149, approximately two miles east of the project site, and Fire Station #76, approximately four miles southeast of the project site.

Regulatory Setting

Los Angeles County Code Title 32

Los Angeles County Code Title 32 comprises the fire code of unincorporated communities in the County of Los Angeles. This includes requirements for emergency vehicle access and exit routes and fire department review.



5.12.1.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

PS-1	Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection services.

5.12.1.3 Environmental Impacts

IMPACT 5.14-1: THE PROPOSED PROJECT WOULD NOT SIGNIFICANTLY IMPACT FIRE PROTECTION SERVICES. [THRESHOLD PS-1]

Impact Analysis: Impacts to public services such as fire protection are generally due to population growth. The proposed project would not draw new population to the area directly, but would serve existing students and new students as the area continues to develop. Existing students currently attend school at nearby campuses, such as West Ranch High School and Valencia High School. These schools, in the communities of Stevenson Ranch and Valencia, respectively, are also within the service boundaries of Battalion 6 of LACoFD. The project would not construct housing or create large employment centers that would encourage substantial new numbers of people to move into the area, and it would not significantly increase the number of people within the service boundaries of the fire department. The project would therefore not require greater fire protection services in the area.

5. Environmental Analysis

PUBLIC SERVICES

John R. Todd, Chief, Forestry Division of LACoFD, submitted a letter in response to the proposed project's NOP. This letter (included in Appendix B) states that the inclusion of a helipad at the site would benefit LACoFD to the point that it would "mitigate any impact this project would have on Fire Department services."

The project would provide a graded helipad in the southwest part of the project site shown on Figure 4-1, *Conceptual Site Plan*; the helipad would serve the surrounding area as well as the proposed school. The LACoFD would build and maintain the helipad. The helipad would aid in emergency and medical evacuations from the school.

The fire department letter also includes requirements for safety and emergency access. The project would comply with all requirements listed. Safety, emergency access, and wildfire hazards are addressed further in Section 5.7, *Hazards and Hazardous Materials*, and Section 5.14, *Transportation and Traffic*.

The proposed project would develop vacant land and therefore increase the intensity of land uses. However, this increase in use is not anticipated to be large enough to significantly affect fire protection services. The proposed project would not require the expansion of fire department facilities, construction of new stations, or the addition of personnel.

The proposed project would create a new access road to the project site, improve existing roads, and provide fire equipment access on the new campus. The Division of the State Architect and the LACoFD would review and approve the fire access and safety plan, which would further ensure adequate emergency access routes, emergency evacuation plans, and fire hydrant flow.

The existing students who would attend the school currently live in the Castaic area, which is served by the LACoFD. Therefore, the new school would not significantly increase the daytime population in the area currently under the jurisdiction of the LACoFD, and additional resources are not expected to be required. Impacts to fire protection services would be less than significant.

5.12.1.4 Existing Regulations and Standard Conditions

- Los Angeles County Code Title 32

5.12.1.5 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the fire protection service impacts would be less than significant.

5.12.1.6 Mitigation Measures

No mitigation measures are necessary.

5.12.1.7 Level of Significance After Mitigation

Fire protection service impacts would be less than significant.

5.12.2 Police Protection

5.12.2.1 Environmental Setting

The Los Angeles County Sheriff's Department would provide police protection to the project. The nearest patrol station is the Santa Clarita Station, approximately eight miles southeast of the project site. This station provides service to City of Santa Clarita and over 600 square miles of unincorporated Los Angeles County, including the communities of Castaic, Stevenson Ranch, and Gorman. The station serves a population of about 265,000 residents. Staff at the Santa Clarita Station includes 185 sworn officers and 36 non-sworn officers. This station includes traffic, detective, COBRA, air support, and search and rescue units. The COBRA team is responsible for investigating all crimes perpetrated by juveniles in the City.

Existing sheriff's response times to the project site are 23 to 25 minutes for non-emergency calls, 9 to 12 minutes for priority calls, and 5 to 8 minutes for emergency calls. Response times vary depending on traffic conditions and on the locations of radio cars when a call is dispatched to the responding deputy (Becker 2012).

Regulatory Setting

No state, regional, or local laws, regulations, plans, or guidelines are of special note regarding the proposed project and police protection.

5.12.2.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

PS-2	Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection services.

5.12.2.3 Environmental Impacts

IMPACT 5.14-2: THE PROPOSED PROJECT WOULD NOT SIGNIFICANTLY IMPACT POLICE PROTECTION SERVICES. [THRESHOLD PS-2]

Impact Analysis: Impacts to police protection are generally due to population growth. The proposed project would initially serve existing students in the Castaic community; these students currently attend West Ranch High School and Valencia High School. These schools, in the communities of Stevenson Ranch and Valencia, respectively, are also within the service boundaries of the Santa Clarita Station. The project would not increase the number of people within the service boundaries of the sheriff's department or within the service boundaries of a specific patrol station. The project would therefore not significantly require greater police protection services in the area, although it would alter and intensify the land use on the site.

The following recommendations for the project were provided by the Los Angeles County Sheriff's Department, Santa Clarita Valley Station:

- Provide one school resource deputy on the proposed campus, to be funded by the District



5. Environmental Analysis

PUBLIC SERVICES

- Provide one office onsite for the school resource deputy
- Provide video monitoring equipment or infrastructure in parking lots and other public areas
- Provide lighting in open areas and parking lots
- Ensure the visibility of doors and windows from the street and between buildings
- Provide adequate on-site parking to accommodate all students, staff, and visitors
- Ensure that the required building address numbers are lighted and readily apparent from the street for emergency response agencies
- Ensure that each building has a rooftop identifier—either letter or number—for ease of locating by an aero unit

The sheriff's department also recommended that roadways serving the fully built-out campus be at least 80 feet wide and include four lanes and a center median, to provide adequate emergency evacuation capacity for the school (Becker 2012). Campus access routes would either consist of two 2-lane roadways or one 4-lane roadway, as discussed in Chapter 4, *Project Description*. Impacts to police protection services would be less than significant.

5.12.2.4 Level of Significance Before Mitigation

Upon implementation of regulatory requirements, standard conditions of approval, police protection service impacts would be less than significant.

5.12.2.5 Mitigation Measure

No mitigation measures are necessary.

5.12.2.6 Level of Significance After Mitigation

Police protection service impacts would be less than significant.

5.12.3 School Services

5.12.3.1 Environmental Setting

Students from the community of Castaic are served by two school districts. Students in kindergarten through eighth grade are served by the Castaic Union School District, which operates three elementary schools and one middle school. The Castaic Union School District had a total enrollment of 3,211 students during the 2009–2010 school year. The William S. Hart Union High School District serves high school students in the region and had a total enrollment of 26,237 students during the 2009–2010 school year (California Department of Education DataQuest 2012). There is no high school in the community of Castaic. High school students from Castaic attend other schools in the area, such as West Ranch High School, approximately seven miles southeast of the site, and Valencia High School, approximately six miles southeast of the site.

Regulatory Setting

State

California Government Code Section 65995

Senate Bill 50 (SB 50, also known as Proposition 1A, codified in California Government Code Section 65995) was enacted in 1988 to address how schools are financed and how development projects may be assessed for associated school impacts. SB 50 allows the school districts to “levy fees against construction”. However, Government Code Section 65995d states that the definition of “construction” does not include “any facility that is owned and occupied by one or more agencies of federal, state, or local government.” As all of the proposed new structures would be owned by the William S. Hart Union High School District, a local government agency, SB 50 would not apply to the proposed project, and school fees would not be required.

5.12.3.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

- PS-3 Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for school services.

5.12.3.3 Environmental Impacts

IMPACT 5.14-3: THE PROPOSED PROJECT WOULD NOT GENERATE NEW STUDENTS OR IMPACT EXISTING SCHOOLS. [THRESHOLD PS-3]

Impact Analysis: The proposed project consists of construction and operation of a new high school. This school would serve an existing student population and would not increase demand for school services. The project would relieve existing overcrowding in other District high schools, including West Ranch High School and Valencia High School. The project would provide a school within the community of Castaic to serve students who currently attend school in other nearby communities. The project would have a beneficial impact on school services in the area and would not result in any adverse impacts to school services or facilities.

5.12.3.4 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, school service impacts would be less than significant.

5.12.3.5 Mitigation Measures

No mitigation measures are required.

5.12.3.6 Level of Significance After Mitigation

School service impacts would be less than significant.



5. Environmental Analysis

PUBLIC SERVICES

5.12.4 Other Public Facilities

5.12.4.1 Environmental Setting

The primary public facility not addressed elsewhere in this document is library services. Library services are provided to the community of Castaic by the County of Los Angeles Public Library system. The Castaic Library branch is at 27971 Sloan Canyon Road. According to its website, this branch has over 20,000 books, DVDs, and CDs. As part of the County of Los Angeles Public Library system, any of the circulating items in the system, of which there are over a million, can be ordered for pickup at Castaic Library. Other features of the library include dedicated computer stations and programs for children and adults.

Regulatory Setting

No state, regional, or local laws, regulations, plans, or guidelines are of special note regarding the proposed project and libraries or other public facilities.

5.12.4.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

PS-4	Result in a substantial adverse physical impact associated with the provisions of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for library services.

5.12.4.3 Environmental Impacts

IMPACT 5.14-4: THE PROPOSED PROJECT WOULD NOT INCREASE THE SERVICE NEEDS FOR LOCAL LIBRARIES. [THRESHOLD PS-4]

Impact Analysis: Demand for library services is tied to the population of a region. Should population increase, demand for library services would increase accordingly. As described above, the proposed project would not have a substantial effect on the population of the region. Furthermore, the proposed project would not directly physically affect any library facilities. No impacts related to library services would occur.

5.12.4.4 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, library service impacts would be less than significant.

5.12.4.5 Mitigation Measures

No mitigation measures are required.

5.12.4.6 Level of Significance After Mitigation

Library service impacts would be less than significant.

5.12.5 Cumulative Impacts

The proposed project would extend infrastructure to the project site, including a roadway and utility connections. This could lead to future development in the area by making future development easier. There are already 16 related projects in the vicinity of the project site that may result in cumulatively considerable impacts on public services when considered in conjunction with the project. Fifteen of the related projects are residential and would increase the service population and cumulative impact on public services because they would result in increases in population, traffic, and structures requiring public services and the subsequent need for new or altered facilities. Related projects may also cause a significant cumulative impact by interfering with emergency access to the neighborhood surrounding the project site. All related projects would be required to undergo CEQA evaluation in order to identify all potential impacts to public services, and if necessary, include mitigation measures that would reduce all adverse impacts to less than significant levels. All related projects would also be required to comply with all applicable county and state codes and ordinances, as well as guidelines related to public services and facilities. In consideration of the preceding factors, the project's contribution to cumulative public service impacts is less than significant, and therefore, project impacts would not be cumulatively considerable.



5. *Environmental Analysis*

PUBLIC SERVICES

This page intentionally left blank.

5. Environmental Analysis

5.13 RECREATION

All figures are placed at end of this section.

5.13.1 Environmental Setting

Existing Conditions

Parks within Five Miles of Project Site

Five public parks are within a five-mile radius of the project site, and all are operated by the Los Angeles County Department of Parks and Recreation (DPR). The parks are described in Table 5.13-1 and shown on Figure 5.13-1, *Public Parks near the Project Site*.

Table 5.13-1
Public Parks within Five Miles of Project Site

Park	Location and Distance from Project Site	Acres	Facilities	
Castaic Lake State Recreation Area ¹	32132 Castaic Lake Drive, Castaic 3.6 miles east	8,700	3 boat launch ramps Fishing pier Boating instructional safety center (bisc) Children's play areas Horseshoe pit Picnic areas Swim beach Bicycling Boating Camping	CSU Northridge Extension campus for water activities Educational programs Fishing Group picnics Hiking Jet skiing Kayaking Mountain biking RV camping Swimming
Castaic Regional Sports Complex	31230 Castaic Road, Castaic 2.7 miles east	51	Horseshoe pits Multipurpose field 12-station par/jogging course Indoor volleyball barbeques Picnic tables Children's play areas (2)	Community rooms Gymnasium Indoor and outdoor basketball courts Kitchen Locker room with showers Softball fields (3-lighted)
Del Valle County Park	28201 Sloan Canyon Road, Castaic 2.3 miles east	5.8	Children's play area Walking paths Restrooms	Multipurpose open playing field Picnic tables
Hasley Canyon County Park	28700 Quincy Street, Castaic 2 miles	5.4	Barbeques Children's play area	Multipurpose open playing field Picnic tables
Val Verde Park	30300 Arlington Road, Val Verde 2 miles	57.6	Outdoor basketball court Children's play area Community recreation building Horseshoe pits	Softball field Swimming pool Picnic tables and BBQ braziers Tennis court

Source: Los Angeles County Department of Parks and Recreation 2011.

¹ Castaic Lake State Recreation Area was established by the state but is operated by Los Angeles County Department of Parks and Recreation.



5. Environmental Analysis

RECREATION

Proposed Parks

Planning is underway by DPR for three new parks in or near the community of Castaic.

- Heritage Park (TR 060678): 39 acres on south side of State Route 126 (SR-126) just east of Ventura County boundary about 6.5 miles south of the project site (DPR 2012a).
- Mission Village (TR 061105): 50 acres south of the junction of Interstate 5 with SR-126 about 4.8 miles southeast of the project site (DPR 2012b).
- The County Department of Parks and Recreation and the Mountains Recreation and Conservation Authority are working on a proposed 510-acre facility about three miles southwest of the project site (SMMC 2006).

The need for additional playfields for youth sports in and near Castaic is due to growth in the area. With over 1,000 children involved in youth sports in the Castaic area, the community has only two places for sports practice: one five-acre park and the Castaic Regional Sports Complex. The county is making plans to expand facilities at the Sports Complex to include more playfields, in addition to adding an aquatic center there. Pending development projects in the area will also be required to provide park space to meet future facility needs.

Trails

A planned and adopted county trail extends along, or next to, part of Romero Canyon Road. Future trail alignment is subject to dedication to the county upon future subdivision of existing parcels. The planned trail is part of a network of trails extending east and south of the project site, as shown on Figure 5.13-2, *Adopted County Trails*.

The Angeles National Forest boundary is about 3.3 miles north of the project site; the forest spans more than 650,000 acres in north-central and northern Los Angeles County, including much of the San Gabriel Mountains (USFS 2011). Some of the county trails in the project region interconnect with trails in the Angeles National Forest east of the project site (DRP 2010).

Other Recreational Facilities

Six Flags Magic Mountain theme park is about five miles southeast of the project site.

Regulatory Background

The Quimby Act, California Government Code Section 66477, requires that a residential developer either: a) dedicate three acres of a new project site per 1,000 residents to parkland, b) pay fees that will be used to acquire, develop, or rehabilitate parkland in that general vicinity, or c) a combination of dedication and/or fees. This requirement is also in Los Angeles County Municipal Code Section 21.28.140, as authorized under the Quimby Act.

The Santa Clarita Valley Area Plan (SCVAP) sets a goal of five acres of parkland per 1,000 residents. The SCVAP has not yet been adopted by the Los Angeles County Board of Supervisors; however, the Regional Planning Commission has voted to recommend approval by the Board of Supervisors.

5.13.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project:

REC-1 Would increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

REC-2 Includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

5.13.3 Environmental Impacts

IMPACT 5.13-1: THE PROPOSED PROJECT WOULD NOT CAUSE INCREASED USE OF RECREATIONAL FACILITIES. [THRESHOLD REC-1]

Impact Analysis: Implementation of the proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities. Physical impacts to recreation facilities are usually associated with population in-migration and growth. The proposed project is intended to meet the projected enrollment demands of the existing and future planned residential developments; therefore, it would not generate population growth. Additionally, the proposed project would include its own play areas, such as a gymnasium, hardcourts, and turf playfields. Students attending the proposed school would not be required to use recreational facilities offsite. Therefore, no physical deterioration of existing recreational facilities would occur.

IMPACT 5.13-2: THE PROPOSED PROJECT WOULD NOT RESULT IN ENVIRONMENTAL IMPACTS FROM NEW OR EXPANDED RECREATIONAL FACILITIES. [THRESHOLD REC-2]

Impact Analysis: The proposed school campus would include recreational facilities for its students and would not require the construction or expansion of offsite recreational facilities. Because the new school is intended to meet the needs of existing and projected population growth in the area, it would not generate additional recreational users. Adequate recreational facilities would be provided onsite, and students would not be required to use offsite recreational facilities. The high school would include indoor and outdoor athletic facilities, including a physical education building with large and small gymnasiums, a football/soccer stadium with a running track, tennis courts, basketball courts, baseball and softball fields, and other playfields. Impacts of the construction and operation of athletic facilities developed as part of the school would be part of the impacts of the entire project that are analyzed throughout Chapter 5 of this DEIR. In addition, school facilities would be available in a limited capacity to the public through the Civic Center Use Permit system. No impacts would occur, and no further analysis is required.

The alignment of the adopted and planned County trail along Romero Canyon Road is subject to dedication to the County upon future subdivision of parcels. The proposed high school site is on parts of all four parcels in the project site. Development of the high school would not involve subdivision of those parcels. Parcels 2 and 3 combined extend the full length of Romero Canyon Road near the project site. If portions of parcels 2 and 3 remaining after development of the proposed school are subdivided for development in the future, then the trail dedication requirement would apply to the subdivided portions of parcels 2 and/or 3. No adverse impact would result from development of the school.

5. Environmental Analysis

RECREATION

5.13.4 Cumulative Impacts

Planned and permitted development in the West Castaic Area totals 1,045 single-family residential units and one 900-student elementary school. The elementary school would have its own play facilities and so is not expected to increase demand for parks in the community. At the standard of five acres of parkland per 1,000 residents, cumulative residential projects would result in more parkland. Required dedication, payment of fees, or both by residential project developers would reduce cumulative impacts to parkland, under Los Angeles County Municipal Code Section 21.28.140.

In consideration of the preceding factors, the project's contribution to cumulative recreation impacts would be less than significant, and therefore project impacts would not be cumulatively considerable.

5.13.5 Existing Regulations and Standard Conditions

There are no existing regulations that would reduce impacts of the project on existing recreation facilities, or on needs for additional recreation facilities. The Quimby Act does not apply to school districts or to school development projects. Related residential projects would be required to dedicate land, pay fees, or both, under Los Angeles County Municipal Code Section 21.28.140.

CDE has open space and playfield requirements for high schools.

5.13.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.13-1, and 5.13-2.

5.13.7 Mitigation Measures

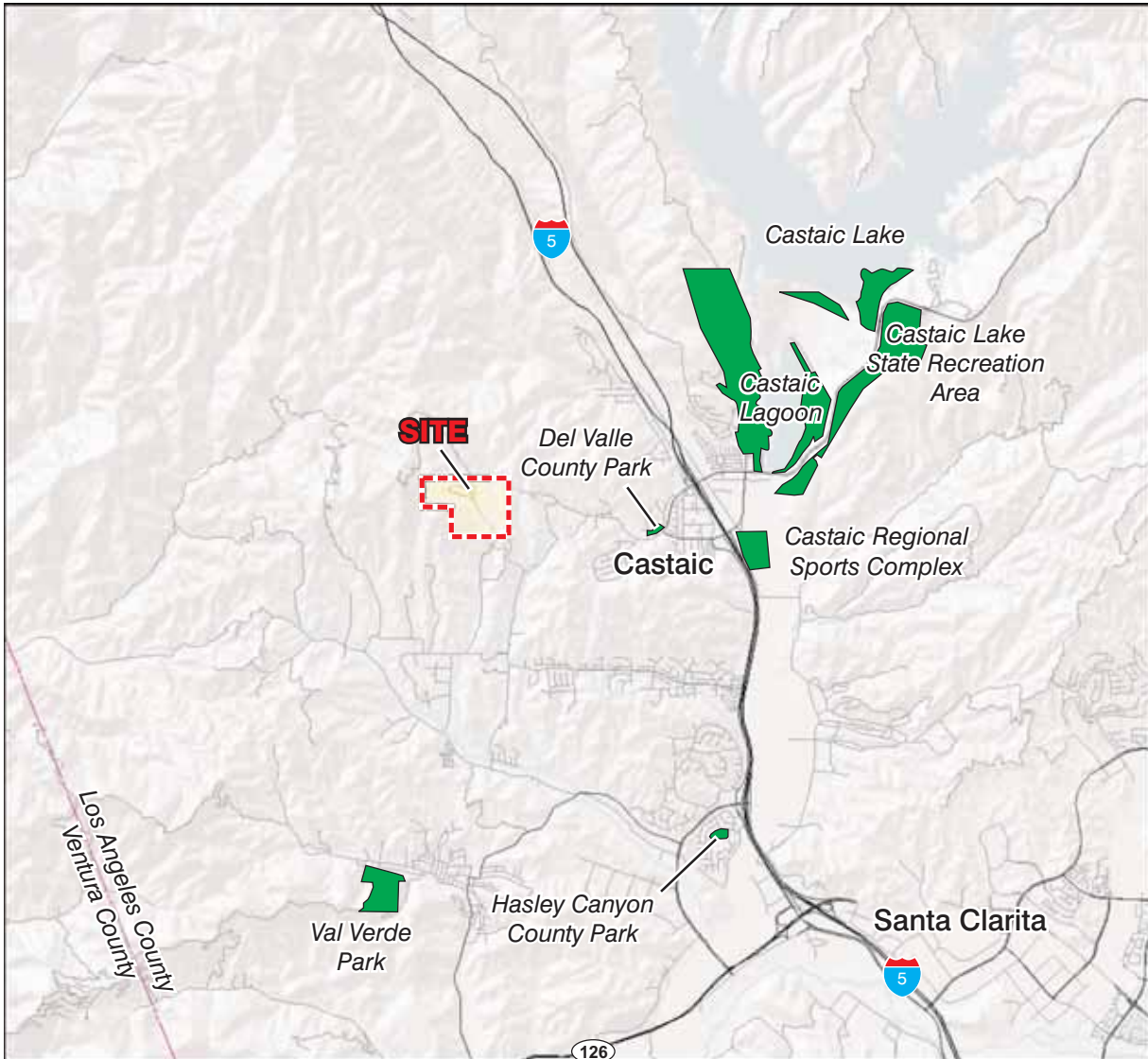
No mitigation measures are required.

5.13.8 Level of Significance After Mitigation

Recreation impacts would be less than significant.

5. Environmental Analysis

Public Parks near the Project Site



0 8,000
Scale (Feet)



Source: RandMcNally.com 2011

Castaic High School Draft EIR

The Planning Center | DC&E • **Figure 5.13-1**

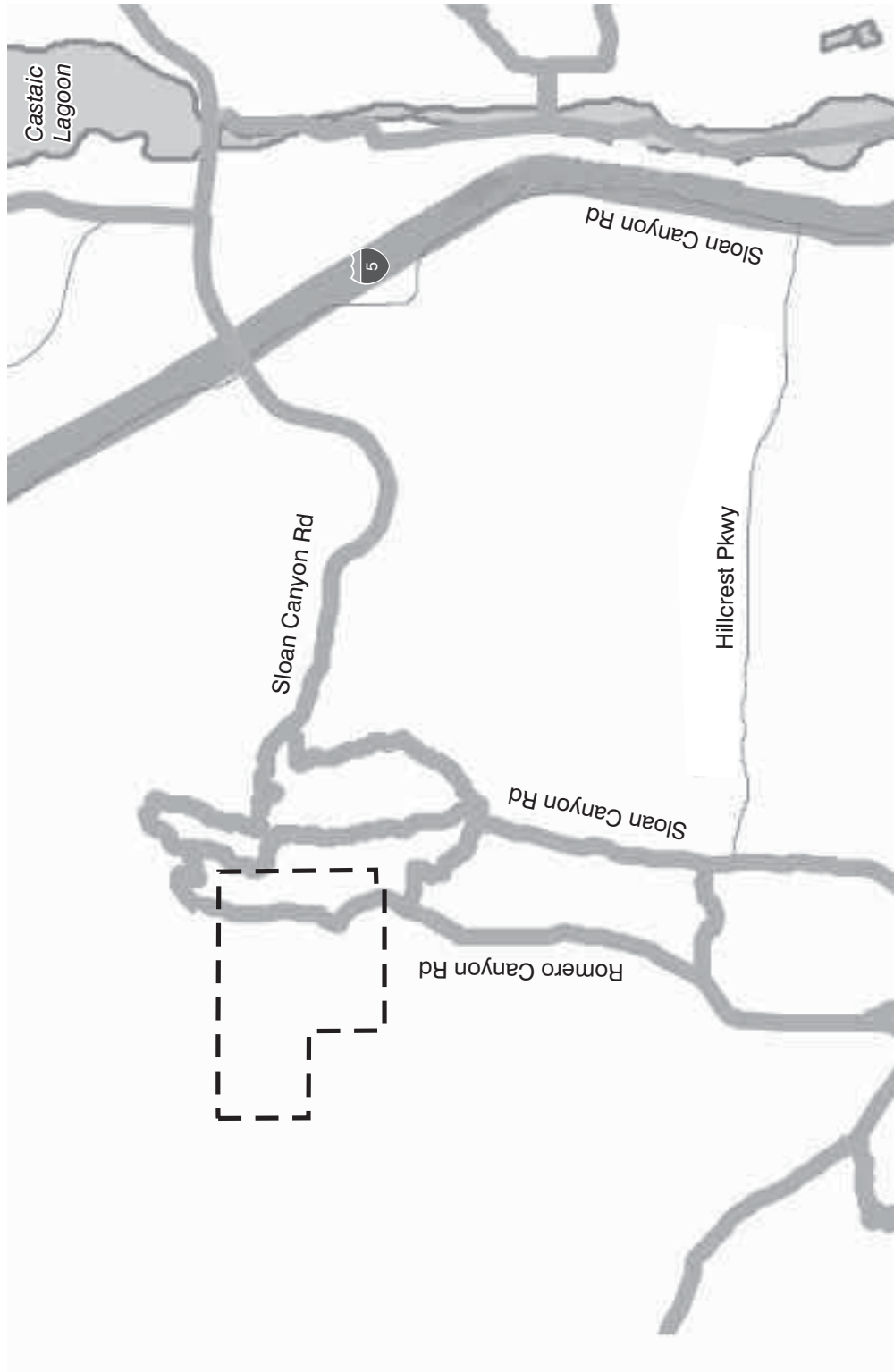
5. *Environmental Analysis*

RECREATION

This page intentionally left blank.

5. Environmental Analysis

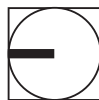
Adopted County Trails



--- Property Boundary

Source: Impact Sciences 2010

Castaic High School Draft EIR



0 1,000
Scale (Feet)



5. *Environmental Analysis*

RECREATION

This page intentionally left blank.

5. Environmental Analysis

5.14 TRANSPORTATION AND TRAFFIC

This section of the Draft Environmental Impact Report (Draft EIR) evaluates the potential for implementation of the Castaic High School to result in transportation and traffic impacts in the communities of Castaic, Hillcrest, and Val Verde in unincorporated Los Angeles County. The analysis in this section is based in part on the following technical reports. The studies are referenced by number in Table 5.14-1, which summarizes which topics were addressed in which study. All studies are in Appendix J of this Draft EIR.

- *Castaic High School – Romero Canyon Site Supplemental Traffic Analysis*, Austin-Foust Associates, Inc., June 28, 2011.
- *Castaic High School Romero Canyon Site Analysis*, Austin-Foust Associates, Inc., June 1, 2010, Revised October 21, 2011.
- *Castaic High School – Preferred Romero Canyon Site Supplemental Analysis with Second Access Roadway*, Austin-Foust Associates, Inc., October 21, 2011.
- *Castaic High School – Preferred Romero Canyon Site Existing Plus Project Traffic Analysis*, Austin-Foust Associates, Inc., January 27, 2012.
- *Castaic High School – Preferred Romero Canyon Site Supplemental Traffic Analysis*, Austin-Foust Associates, Inc., May 24, 2012.

All figures are placed at the end of this section.

Topics Addressed by Study

Project-related traffic impacts were analyzed with two student capacities: interim 1,600-student capacity and full buildout 2,600-student capacity. Impacts were analyzed at three time horizons: Existing conditions plus project; short-term (2014) plus project; and general plan buildout plus project. Buildout of land uses near the project site in accordance with land use designations in the Santa Clarita Valley Area Plan is conservatively estimated to occur by 2035. Two scenarios were analyzed for access roads to the project:

- Scenario 1 involves one public-road access route—a northern route extension of Sloan Canyon Road. A gated emergency-only access would be provided on Romero Canyon Road south of the school site.
- Scenario 2 involves two public-road access routes—the northern route described in Scenario 1 and a southern route extension from Hillcrest Parkway to Sloan Canyon to Baringer Road to Valley Creek Road. A gated emergency access via Romero Canyon Road just south of Baringer Road would also be provided under this scenario.

Scenarios for access roads are discussed in more detail in Chapter 4, *Project Description*, and in Section 5.14-3, *Environmental Impacts*.



5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-1
Topics Analyzed in Traffic Studies

<i>Time Horizon</i>	<i>School Capacity</i>	<i>Access Road Scenario</i>	<i>Traffic Studies</i>
Existing Plus Project	1,600 and 2,600	1 and 2	5
Short-Term (2014) Plus Project	1,600 and 2,600	1	1, 2
	1,600 and 2,600	2	3, 4
Buildout Plus Project	2,600	1	1, 2
	2,600	2	3, 4
Proposed Access Road Intersections, Northern Route	2,600	1 and 2	6

5.14.1 Environmental Setting

Existing Roadway Network

There are no paved roads onsite or accessing to the site. The nearest arterial street is Sloan Canyon Road about 1.3 miles east of the site. Sloan Canyon Road continues west to about 0.5 mile east of the site as an unpaved road. Access to the site is via Romero Canyon Road, a dirt road, which becomes a paved road about 0.5 mile south of the site, continuing southward 1.3 more miles to Hasley Canyon Road, a two-lane paved road. Regional access to the site is via I-5 at Hasley Canyon Road, Sloan Canyon Road, or Parker Road (see Figure 3-2, *Project Area*).

Other roads assessed in the project traffic impact studies are listed in Table 5.14-2.

Table 5.14-2
Study Area Roadways

<i>Roadway</i>	<i>Travel Lanes</i>	<i>Direction</i>	<i>Speed Limit, MPH</i>	<i>Classification, Los Angeles County General Plan</i>
Sloan Canyon Road				
• Castaic Road to Quail Valley Road	2	East-west	40	Limited Secondary Highway
• West of Quail Valley Road	1 (dirt)	East-west	None	Limited Secondary Highway
• North of Hillcrest Parkway	1 (dirt)	North-south	None	None (local)
Quail Valley Road				
• South of Sloan Canyon Road	2	North-south	25	None (local)
Parker Road				
• Sloan Canyon Road to The Old Road	2	East-west	40	Limited Secondary Highway
• The Old Road to I-5	2	East-west	40	Major Highway
The Old Road				
• North of Sloan Canyon Road	2	North-south	45	Secondary Highway
• Sloan Canyon Road to Parker Road	2	North-south	45	Secondary Highway
• Parker Road to Hillcrest Parkway	2	North-south	45	Secondary Highway
Castaic Road				
• Lake Hughes Road to Ridge Route Road	4	North-south	35	Major Highway
Hillcrest Parkway				
• Sloan Canyon Road to The Old Road	4	East-west	35	Secondary Highway
Lake Hughes Road				
• The Old Road to Ridge Route Road	4	East-west	35	Major Highway
Ridge Route Road				
• I-5 Freeway to Castaic Road	2	North-south	40	Major Highway
• Castaic Road to Lake Hughes Road	4	North-south	35	Secondary Highway

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Existing Intersections

Intersections analyzed in the traffic impact studies are listed in Table 5.14-3 and mapped on Figure 5.14-1, *Intersection Location Map*.

Table 5.14-3
Existing Intersections

<i>Intersection</i>		<i>Traffic Control</i>
1	Sloan Canyon Road at Quail Valley Road	Cross-street stop
2	Lake Hughes Road at Northbound I-5 Ramp	Stop at ramp end
3	Parker Road at Southbound I-5 Ramp	None
4	Ridge Route at Northbound I-5 Ramp	Stop at ramp end
5	Sloan Canyon Road at The Old Road	Signalized
6	The Old Road at Parker Road	Four-way stop
7	Castaic Road at Lake Hughes Road	Signalized
8	Castaic Road at Ridge Route	Four-way stop
9	Sloan Canyon Road at Parker Road	Cross-street stop

Existing Traffic Conditions

Assessing Intersection Operation

Analysis of the operation of the arterial roadway system is based on intersection capacity, since intersection capacity determines the capacity of the whole arterial roadway system. Intersection operation generally is assessed by comparing intersection capacity to intersection traffic volume (volume to capacity ratio, or V/C ratio), where volume is either a traffic count of existing volumes or a forecast of future volumes. Intersection operation is described by a level of service (LOS) based on the V/C ratio. Levels of service range from LOS A, indicating free traffic flow and minimal or no delays, to LOS F, indicating extreme congestion and severe delays. The relationship between V/C ratio and LOS is shown in Table 5.14-4.



Table 5.14-4
Intersection Levels of Service

<i>LOS</i>	<i>Volume to Capacity Ratio</i>
A	0.00 – 0.60
B	0.61 – 0.70
C	0.71 – 0.80
D	0.81 – 0.90
E	0.90 – 1.00
F	> 1.00

Source: Highway Capacity Manual, 2000.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Existing Intersection ICU values and LOS

Assessments of existing intersection operation in 2010, that is, ICU values and LOS, are listed in Table 5.14-5.

Table 5.14-5
Existing Intersection ICU and LOS (2010)

<i>Intersection</i>		<i>AM Peak Hour</i>		<i>PM Peak Hour</i>	
		<i>ICU</i>	<i>LOS</i>	<i>ICU</i>	<i>LOS</i>
1	Sloan Canyon Road at Quail Valley Road	0.26	A	0.23	A
2	Lake Hughes Road at Northbound I-5 Ramp	0.32	A	0.47	A
3	Parker Road at Southbound I-5 Ramp	0.59	A	0.48	A
4	Ridge Route at Northbound I-5 Ramp	0.46	A	0.55	A
5	Sloan Canyon Road at The Old Road	0.38	A	0.42	A
6	The Old Road at Parker Road	0.51	A	0.49	A
7	Castaic Road at Lake Hughes Road	0.33	A	0.47	A
8	Castaic Road at Ridge Route	0.33	A	0.40	A
9	Sloan Canyon Road at Parker Road	0.28	A	0.25	A

Existing Roadway Segment Traffic Volumes

Traffic volumes on roadway segments in the arterial roadway system in the traffic study area are listed below in Table 5.14-6. Through roadway segment traffic volumes are not used in determining impacts to intersection operation, they are used in analyzing impacts to air quality, noise, and greenhouse gas emissions and are provided here for reference.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-6
Roadway Segment Daily Traffic Volumes, Existing Conditions (2010)

<i>Roadway Segment</i>	<i>Daily Traffic Volume</i>
Sloan Canyon west of Quail Valley	<1,000
Sloan Canyon east of Quail Valley	3,000
Parker east of Sloan Canyon	4,000
Sloan Canyon north of Parker	2,000
Lake Hughes east of I-5 Ramps	10,000
Lake Hughes east of I-5 Ramps	13,000
Lake Hughes east of Castaic	6,000
Parker east of The Old Road	7,000
Parker between I-5 Ramps	9,000
Ridge Route east of I-5 Ramps	11,000
Ridge Route north of Castaic	6,000
The Old Rd north of Sloan Canyon	8,000
The Old Rd south of Parker	6,000



The intersection capacity utilization (ICU) methodology was used in the traffic studies for this project; the ICU method sums the V/C ratios for the critical movements of an intersection and is the preferred procedure for intersection analysis by the County of Los Angeles.

Existing Public Transit Service

The nearest existing public bus service to the project site is Santa Clarita Transit Route 1, which passes through the intersection of Sloan Canyon Road and Parker Road about 1.5 miles east of the project site. Route 1 operates seven days per week with average peak hour weekday frequency of 30 minutes, providing service between Castaic on the west and Canyon Country in the City of Santa Clarita on the east (Santa Clarita Transit 2012). Santa Clarita Transit provides school bus service to several District high schools and junior high schools; in addition, several regular Santa Clarita Transit bus routes pass by District schools.

5.14.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project could:

- T-1 Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

T-2	Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.
T-3	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
T-4	Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
T-5	Are traffic and pedestrian hazards mitigated per Caltrans' School Area Pedestrian Safety manual?
T-6	Is the site easily accessible from arterials and is the minimum peripheral visibility maintained for driveways per Caltrans' Highway Design Manual?
T-7	Is the proposed school site within 1,500 feet of a railroad track easement?
T-8	Result in inadequate emergency access.
T-9	Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.
T-10	Result in inadequate parking capacity.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following threshold would be less than significant:

- Thresholds T-3 and T-7

These impacts will not be addressed in the following analysis.

5.14.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.14-1: PROJECT-GENERATED TRAFFIC WOULD RESULT IN UNACCEPTABLE LEVELS OF SERVICE AT SEVERAL EXISTING STUDY AREA INTERSECTIONS. [THRESHOLD T-1]

Impact Analysis:

Project Access

Access Scenario 1

Access Scenario 1 provides public access along a route that begins as an extension of Sloan Canyon Road to the high school campus. This roadway would provide one travel lane in each direction and an optional middle turn-lane, with a Class III bike route (signed not striped), a five-foot sidewalk along the south side, and a possible future multi-purpose trail along the north side. Figure 5.14-2 shows a conceptual roadway and intersection lane layout for this route, known as Northern Route – Option A. Figure 4-3 in Section 4, *Project Description*, shows this road in section view. The District is also considering a second option for the

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

extension of Sloan Canyon Road to the campus known as Northern Route – Option B (see Figure 5.14-3). These options following the two alignments in table 15.14-7.

Table 5.14-7
Northern Access Roads

Option A	Option B
Sloan Canyon Road west to Mandolin Canyon Road	Sloan Canyon Road west to Canyon Hill Road
Mandolin Canyon Road north to Harp Canyon Road	Canyon Hill Road west to Valley Creek Road at school access point
Harp Canyon Road west to North Romero Canyon Road	
North Romero Canyon Road south to Valley Creek Road	
Valley Creek Road to the school access point	

Access Scenario 1 also provides emergency-only access along a southern route (Romero Canyon Road). An emergency-access gate would be constructed on Romero Canyon Road just south of Baringer Road. Turn-around areas would be constructed on the north and south sides of the gate.

Access Scenario 1 with one travel lane in each direction is adequate to provide access for the high school with up to 1,600 students. Prior to exceeding this 1,600-student limit, the District must complete one of the following: 1) widen the pavement and restripe the northern public access route to provide four lanes of travel (two lanes in each direction); 2) complete the southern public access route per Access Scenario 2; or 3) make a finding in the future that other roads in the area have been fully constructed by others and that these roads will provide adequate access to accommodate the ultimate school capacity of 2,600 students.



Access Scenario 2

Access Scenario 2 includes the same northern public access road options as Access Scenario 1, but is combined with a southern public access road connecting the campus to Hillcrest Parkway. Figure 4-2 shows the southern route under Access Scenario 2 and Figure 4-3 shows the section view for the southern route. This route follows existing dirt roads as follows:

1. Sloan Canyon Road north beginning at the western end of Hillcrest Parkway
2. Baringer Road west to Valley Creek Road
3. Romero Canyon Road/Valley Creek Road north to campus

The emergency-only access along a southern route (Romero Canyon Road) would be established under Scenario 2 as well. An emergency-access gate would be constructed on Romero Canyon Road just south of Baringer Road.

Access scenarios are summarized in Table 5.14-8. For the northern access route all scenarios and options would include Class III bike routes in the roadway, and graded dirt shoulders plus a possible future multipurpose trail alongside the roadway.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

**Table 5.14-8
Access Roads Scenarios Summary**

Scenario	Option	Northern Access Route (public roads)	Southern Access Route (public roads)	Southern gated Emergency Access	Northern Access Route	
					Roadway Width, feet	Lanes
1	A	Sloan Canyon Road-Mandolin Canyon Road-Harp Canyon Road-North Romero Canyon Road-Valley Creek Road	None	Romero Canyon Road	50 feet	4
	B	Sloan Canyon Road-Canyon Hill Road	None	Romero Canyon Road	50 feet	4
2	A	Sloan Canyon Road-Mandolin Canyon Road-Harp Canyon Road-North Romero Canyon Road-Valley Creek Road	Valley Creek Road/Romero Canyon Road-Baringer Road-Sloan Canyon Road	Romero Canyon Road	28 feet	2
	B	Sloan Canyon Road-Canyon Hill Road	Valley Creek Road/Romero Canyon Road-Baringer Road-Sloan Canyon Road	Romero Canyon Road	36 to 44 feet	2

Project Trip Generation

Project trip generation is shown in Table 5.14-9 and was forecast using trip generation rates estimated for previous traffic impact analyses for the proposed project as well as from *Trip Generation*, 7th edition, by the Institute of Transportation Engineers (2003).

**Table 5.14-9
Project Trip Generation**

Scenario	AM Peak Hour		PM Peak Hour		Daily	
	Trip Generation Rate	Trips	Trip Generation Rate	Trips	Trip Generation Rate	Trips
1,600 students (Interim condition)	0.95	608	0.13	208	2.84	4,544
2,600 students (Buildout)	0.95	988	0.13	338	2.84	7,384

Source: Austin-Foust 2010.

Project Trip Distribution

The project distribution percentages were derived from the William S. Hart Union High School District Fall 2008 Project Report, which estimates attendance numbers through the year 2015.

Forecast project trip distribution for Scenario 1 is shown in Figure 5.14-4, *Forecast Project Trip Distribution, Scenario 1*. The trip distribution is the same for both Options A and B of the northern route. The trip distribution for Scenario 2 is shown in Figure 5.14-5, *Forecast Project Trip Distribution, Scenario 2*.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Project Traffic Impacts

Two baselines are generally used for analysis of traffic impacts of a project:

- Project-generated traffic added to existing conditions, in accord with recent court cases.
- Project-generated traffic added to forecast baseline conditions at project buildout. Baseline conditions at project buildout were forecast in the traffic study for the proposed project using a growth rate for regional increase in traffic adding forecast trips from related projects. In some cases separate baselines are used for different phases or years for a project. That approach was used for this project, which includes short-term (2014) analysis of both interim enrollment of 1,600 students and buildout enrollment of 2,600 students, and General Plan buildout analysis (approximately 2035) of school buildout enrollment of 2,600 students.

Significance Threshold

The intersection performance standard used by the Los Angeles County Department of Public Works is that an ICU of below 0.75, that is, LOS mid-C, or the existing LOS, whichever is greater. The standard used by Caltrans is LOS C or the existing LOS, whichever is greater, and the standard used in the Los Angeles County Congestion Management Program is LOS E.

The Los Angeles County threshold for significant traffic impact is as follows:

<u>Pre-project ICU</u>	<u>Project Increment</u>
0.71–0.80 (LOS C)	greater than or equal to 0.04
0.81–0.90 (LOS D)	greater than or equal to 0.02
0.91 or more (LOS E or F)	greater than or equal to 0.01



Existing Plus Project

Scenario 1

Intersection LOS in Scenario 1 are listed in Table 5.14-10 for operation at interim capacity of 1,600 students, and in Table 5.14-11 for operation at the buildout capacity of 2,600 students. The nearest intersection is Quail Valley Road and Sloan Canyon Road, about 1.3 miles east of the project site. The access routes in Scenario 1-Options A and B would diverge at Sloan Canyon Road and Mandolin Canyon Road about one mile west of Quail Valley Road and Sloan Canyon Road. It is assumed that traffic flow at the nine intersections analyzed for the traffic study would be the same in either Option A or B under Scenario 1. Therefore, it is assumed that the following analysis would apply to either Option A or B.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-10
Intersection ICU and LOS, Existing plus 1,600-Student Project Conditions, Scenario 1

Intersection		Existing Conditions				Existing Plus Project (1,600 Students)				Project Increment	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM	PM
		ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS		
1	Sloan Canyon Road at Quail Valley Road	0.26	A	0.23	A	0.78	C	0.30	A	0.52	0.07
2	Lake Hughes Road at Northbound I-5 Ramp	0.32	A	0.47	A	0.38	A	0.47	A	0.00	0.00
3	Parker Road at Southbound I-5 Ramp	0.59	A	0.48	A	0.70	B	0.50	A	0.11	0.02
4	Ridge Route at Northbound I-5 Ramp	0.46	A	0.55	A	0.68	B	0.55	A	0.22	0.00
5	Sloan Canyon Road at The Old Road	0.38	A	0.42	A	0.36	A	0.41	A	-0.02 ¹	-0.01 ¹
6	The Old Road at Parker Road	0.51	A	0.49	A	0.76	C	0.51	A	0.25*	0.02
7	Castaic Road at Lake Hughes Road	0.33	A	0.47	A	0.34	A	0.47	A	0.01	0.00
8	Castaic Road at Ridge Route	0.33	A	0.40	A	0.33	A	0.40	A	0.00	0.00
9	Sloan Canyon Road at Parker Road	0.28	A	0.25	A	1.10	F	0.37	A	0.82*	0.12

Note: **Bold** denotes significant impact.

Table 5.14-11
Intersection ICU and LOS, Existing Plus 2,600-Student Project Conditions, Scenario 1

Intersection		Existing Conditions				Existing plus Project (2,600 Students)				Project Increment	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM	PM
		ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS		
1	Sloan Canyon Road at Quail Valley Road	0.26	A	0.23	A	1.14	F	0.30	A	0.88*	0.12
2	Lake Hughes Road at Northbound I-5 Ramp	0.32	A	0.47	A	0.34	A	0.47	A	0.02	0.00
3	Parker Road at Southbound I-5 Ramp	0.59	A	0.48	A	0.86	D	0.52	A	0.27*	0.04
4	Ridge Route at Northbound I-5 Ramp	0.46	A	0.55	A	0.85	D	0.56	A	0.39*	0.01
5	Sloan Canyon Road at The Old Road	0.38	A	0.42	A	0.41	A	0.42	A	0.03	0.00
6	The Old Road at Parker Road	0.51	A	0.49	A	1.01	F	0.52	A	0.50*	0.03
7	Castaic Road at Lake Hughes Road	0.33	A	0.47	A	0.37	A	0.47	A	0.04	0.00
8	Castaic Road at Ridge Route	0.33	A	0.40	A	0.34	A	0.40	A	0.01	0.00
9	Sloan Canyon Road at Parker Road	0.28	A	0.25	A	1.62	F	0.44	A	1.34	0.19

Note: **Bold** denotes significant impact.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Scenario 2

Intersection LOS in Scenario 2 are listed in Table 5.14-12 for operation at interim capacity of 1,600 students, and in Table 5.14-13 for operation at the buildout capacity of 2,600 students. Note that existing intersections along the southern route are not analyzed in this section. The first major existing intersection on Hillcrest Parkway beyond the southern route is Hillcrest Parkway at The Old Road, about 2.4 miles southeast of the project site. Approximately 58 percent of school-generated trips are estimated to use the southern route. About half of those trips would originate within the Hillcrest neighborhood, while the remaining trips would be drawn from The Old Road. The net increase in trips on Hillcrest Parkway at that distance from the school site would be about zero due to redistribution of school trips from existing high schools to the proposed school. Therefore, existing intersections on the southern route were not included in the study intersections (Zerfass 2012).

Table 5.14-12
Intersection ICU and LOS, Existing plus 1,600-Student Project Conditions, Scenario 2

Intersection		Existing Conditions				Existing Plus Project (1,600 Students)				Project Increment	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM	PM
		ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS		
1	Sloan Canyon Road at Quail Valley Road	0.26	A	0.23	A	0.46	A	0.26	A	0.20	0.03
2	Lake Hughes Road at Northbound I-5 Ramp	0.32	A	0.47	A	0.33	A	0.47	A	0.01	0.00
3	Parker Road at Southbound I-5 Ramp	0.59	A	0.48	A	0.60	A	0.48	A	0.01	0.00
4	Ridge Route at Northbound I-5 Ramp	0.46	A	0.55	A	0.49	A	0.55	A	0.03	0.00
5	Sloan Canyon Road at The Old Road	0.38	A	0.42	A	0.37	A	0.42	A	-0.01	0.00
6	The Old Road at Parker Road	0.51	A	0.49	A	0.54	A	0.50	A	0.03	0.01
7	Castaic Road at Lake Hughes Road	0.33	A	0.47	A	0.36	A	0.47	A	0.003	0.00
8	Castaic Road at Ridge Route	0.33	A	0.40	A	0.34	A	0.40	A	0.01	0.00
9	Sloan Canyon Road at Parker Road	0.28	A	0.25	A	0.56	A	0.30	A	0.28	0.05



5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-13
Intersection ICU and LOS, Existing plus 2,600-Student Project Conditions, Scenario 2

Intersection		Existing Conditions				Existing plus Project (2,600 Students)				Project Increment	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM	PM
		ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS		
1	Sloan Canyon Road at Quail Valley Road	0.26	A	0.23	A	0.61	B	0.30	A	0.35	0.06
2	Lake Hughes Road at Northbound I-5 Ramp	0.32	A	0.47	A	0.35	A	0.47	A	0.03	0.00
3	Parker Road at Southbound I-5 Ramp	0.59	A	0.48	A	0.62	B	0.52	A	0.03	0.00
4	Ridge Route at Northbound I-5 Ramp	0.46	A	0.55	A	0.52	A	0.56	A	0.06	0.00
5	Sloan Canyon Road at The Old Road	0.38	A	0.42	A	0.41	A	0.42	A	0.03	0.01
6	The Old Road at Parker Road	0.51	A	0.49	A	0.59	F	0.52	A	0.08	0.01
7	Castaic Road at Lake Hughes Road	0.33	A	0.47	A	0.39	A	0.47	A	0.06	0.00
8	Castaic Road at Ridge Route	0.33	A	0.40	A	0.35	A	0.40	A	0.02	0.00
9	Sloan Canyon Road at Parker Road	0.28	A	0.25	A	0.73	C	0.44	A	0.45	0.07

Cumulative Traffic Conditions: Short-Range (2014) Conditions

Cumulative without-project traffic conditions were forecast using a combination of two methods:

- Using a 2 percent per year growth rate to account for regional increase in traffic. The total forecast percentage growth for the four-year period was 8 percent.
- Adding estimated traffic generation from related projects.

Related Projects

Sixteen related projects were identified by the Los Angeles County Department of Regional Planning; the projects are listed in Table 5.14-14 and the locations of the projects shown on Figure 3-10.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

**Table 5.14-14
Related Projects**

<i>Tract/GP Designation</i>	<i>Units</i>	<i>Type</i>
TR067278	23 DU	Single-Family Residential
TR42537	222 DU	Single-Family Residential
TR46443	95 DU	Single-Family Residential
TR47807	38 DU	Single-Family Residential
TR52729	36 DU	Single-Family Residential
PM069961	4 DU	Single-Family Residential
PM071059	4 DU	Single-Family Residential
PM19149-2	4 DU	Single-Family Residential
GP (NU1/RR1)	30 DU	Single-Family Residential
GP (NU1/RR1)	95 DU	Single-Family Residential
GP (NU2/RR2)	12 DU	Single-Family Residential
GP (NU3/RR3)	3 DU	Single-Family Residential
GP (NU3/RR3)	47 DU	Single-Family Residential
GP (NU3/RR3)	46 DU	Single-Family Residential
GP (UR1)	386 DU	Single-Family Residential
Subtotal (Residential)	1,045 DU	Single-Family Residential
Elementary School	900 Students	Elementary School

Forecast Trip Generation by Related Projects

Forecast trip generation by related projects is shown in Table 5.14-15; total daily trip generation is 11,675 trips.



**Table 5.14-15
Forecast Trip Generation by Related Projects**

<i>Land Use</i>	<i>Quantity</i>	<i>AM Peak Hour</i>		<i>PM Peak Hour</i>		<i>Daily</i>	
		<i>Trip Generation Rate</i>	<i>Trips</i>	<i>Trip Generation Rate</i>	<i>Trips</i>	<i>Trip Generation Rate</i>	<i>Trips</i>
Single-Family Residential (15 projects)	1,045 units	0.75	785	1.01	1,055	9.75	10,001
Elementary School (one)	900 Students	0.72	648	0.08	72	1.86	1,674
Total	NA	NA	1,433	NA	1,127	NA	11,675

Cumulative 2014 Without-Project Traffic Conditions

In the without-project conditions the school is not built and the access roads that would be built for the school are not built. All nine existing intersections analyzed in the traffic study would be in place. Operation at those nine intersections in 2014 without-project conditions is described in Table 5.14-16.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-16
Intersection ICU and LOS, 2014 Without-Project Conditions

<i>Intersection</i>		<i>AM Peak Hour</i>		<i>PM Peak Hour</i>	
		<i>ICU</i>	<i>LOS</i>	<i>ICU</i>	<i>LOS</i>
1	Sloan Canyon Road at Quail Valley Road	.41	A	.35	A
2	Lake Hughes Road at Northbound I-5 Ramp	.34	A	.51	A
3	Parker Road at Southbound I-5 Ramp	.71	C	.60	A
4	Ridge Route at Northbound I-5 Ramp	.52	A	.64	B
5	Sloan Canyon Road at The Old Road	.41	A	.46	A
6	The Old Road at Parker Road	.63	B	.61	B
7	Castaic Road at Lake Hughes Road	.36	A	.52	A
8	Castaic Road at Ridge Route	.38	A	.44	A
9	Sloan Canyon Road at Parker Road	.47	A	.48	A

Short-Term (1,600 Student Capacity) With-Project Conditions

With-project traffic conditions are shown below for Scenario 1 in Table 5.14-17 and Scenario 2 in Table 5.14-18.

Scenario 1

In Scenario 1 one public-road access route is built to the school via the northern route and emergency access would be provided via a gated access on Romero Canyon Road.

Table 5.14-17 shows that operation of the proposed high school with access road Scenario 1 would result in significant traffic impacts during the AM peak hour at the following intersections:

- Sloan Canyon Road at Quail Valley Road
- Parker Road at Southbound I-5 Ramp
- The Old Road at Parker Road
- Sloan Canyon Road at Parker Road

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-17
Intersection ICU and LOS, 2014 With-Project Conditions, 1,600 Students,
Scenario 1

Intersection		Without Project				With Project				Project Increment	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
		ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM	PM
1	Sloan Canyon Road at Quail Valley Road	.41	A	.35	A	.84	D	.42	A	.43	.07
2	Lake Hughes Road at Northbound I-5 Ramp	.34	A	.51	A	.33	A	.51	A	-.01	.00
3	Parker Road at Southbound I-5 Ramp	.71	C	.60	A	.81	D	.62	B	.10	.02
4	Ridge Route at Northbound I-5 Ramp	.52	A	.64	B	.74	C	.66	B	.22	.02
5	Sloan Canyon Road at The Old Road	.41	A	.46	A	.41	A	.45	A	.00	-.01
6	The Old Road at Parker Road	.63	B	.61	B	.87	D	.63	B	.24	.02
7	Castaic Road at Lake Hughes Road	.36	A	.52	A	.37	A	.52	A	.01	.00
8	Castaic Road at Ridge Route	.38	A	.44	A	.38	A	.44	A	.00	.00
9	Sloan Canyon Road at Parker Road	.47	A	.48	A	1.29	F	.59	A	.82	.11

Note: **Bold** denotes significant impact.



Scenario 2

Scenario 2 would consist of one of the same two northern public access road options as in Scenario 1, plus a second southern public access road option routed, from north to south, via Valley Creek Road/Romero Canyon Road to Baringer Road to Sloan Canyon Road to Hillcrest Parkway.

Intersection LOS for Scenario 2 for operation of the school at 1,600 students capacity is shown in Table 5.14-18.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-18
Intersection ICU and LOS, 2014 With-Project Conditions, 1,600 Students,
Scenario 2

Intersection		Without Project				With Project				Project Increment	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
		ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM	PM
1	Sloan Canyon Road at Quail Valley Road	.41	A	.35	A	.58	A	.37	A	.17	.02
2	Lake Hughes Road at Northbound I-5 Ramp	.34	A	.51	A	.36	A	.51	A	.02	.00
3	Parker Road at Southbound I-5 Ramp	.71	C	.60	A	.72	C	.60	A	.01	.00
4	Ridge Route at Northbound I-5 Ramp	.52	A	.64	B	.55	A	.64	B	.03	.00
5	Sloan Canyon Road at The Old Road	.41	A	.46	A	.41	A	.46	A	.00	.00
6	The Old Road at Parker Road	.63	B	.61	B	.65	B	.61	B	.02	.00
7	Castaic Road at Lake Hughes Road	.36	A	.52	A	.39	A	.52	A	.03	.00
8	Castaic Road at Ridge Route	.38	A	.44	A	.38	A	.44	A	.00	.00
9	Sloan Canyon Road at Parker Road	.47	A	.48	A	.75	C	.51	A	.28	.03

Note: **Bold** denotes significant impact.

Short-Term (2,600 Student Capacity) With-Project Conditions

Traffic conditions were analyzed for short-term (2014) with-project conditions for the school at its full 2,600-student capacity to have a consistent baseline of comparison with analyses for existing plus project and buildout conditions. However, it is understood that the school would not reach 2,600 students enrollment by 2014, and the project description assumes that the school would reach 1,316 enrollment in 2018.

Scenario 1

Operation of the high school in 2014 at full 2,600-student capacity would cause significant traffic impacts to the following five intersections, as shown below in Table 5.14-19.

- Sloan Canyon Road at Quail Valley Road
- Parker Road at Southbound I-5 Ramp
- Parker Road at Northbound I-5 Ramp
- The Old Road at Parker Road
- Sloan Canyon Road at Parker Road

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-19
Intersection ICU and LOS, 2014 With-Project Conditions, 2,600 Students,
Scenario 1

Intersection		Without Project				With Project				Project Increment	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
		ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM	PM
1	Sloan Canyon Road at Quail Valley Road	.41	A	.35	A	1.20	F	.46	A	.79	.11
2	Lake Hughes Road at Northbound I-5 Ramp	.34	A	.51	A	.35	A	.51	A	.01	.00
3	Parker Road at Southbound I-5 Ramp	.71	C	.60	A	.92	E	.64	B	.21	.04
4	Ridge Route at Northbound I-5 Ramp	.52	A	.64	B	.91 ¹	E ¹	.68	B	.39	.04
5	Sloan Canyon Road at The Old Road	.41	A	.46	A	.45	A	.45	A	.04	-.01
6	The Old Road at Parker Road	.63	B	.61	B	1.09	F	.65	B	.46	.04
7	Castaic Road at Lake Hughes Road	.36	A	.52	A	.40	A	.53	A	.04	.01
8	Castaic Road at Ridge Route	.38	A	.44	A	.38	A	.44	A	.00	.00
9	Sloan Canyon Road at Parker Road	.47	A	.48	A	1.80	F	.67	B	1.33	.19

Note: **Bold** denotes significant impact.

¹ Note this location has mitigation in the form of a traffic signal that is applicable to the 2,600-student scenario only; however traffic signal mitigation does not change/improve ICU.



Scenario 2

Operation of the high school in 2014 at full 2,600-student capacity in Scenario 2 would cause significant traffic impacts to the intersection of Sloan Canyon Road at Parker Road, as shown in Table 5.14-20.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-20
Intersection ICU and LOS, 2014 With-Project Conditions,
2,600 Students, Scenario 2

Intersection		Without Project				With Project				Project Increment	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
		ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM	PM
1	Sloan Canyon Road at Quail Valley Road	.41	A	.35	A	0.68	A	0.39	A	.21	.11
2	Lake Hughes Road at Northbound I-5 Ramp	.34	A	.51	A		.38	A	.52	A	.01
3	Parker Road at Southbound I-5 Ramp	.71	C	.60	A	.74	C	.60	A	.21	.04
4	Ridge Route at Northbound I-5 Ramp	.52	A	.64	B	.58	A	.64	B	.39	.04
5	Sloan Canyon Road at The Old Road	.41	A	.46	A	.45	A	.46	A	.04	.00
6	The Old Road at Parker Road	.63	B	.61	B	0.71	C	.62	B	.08	.01
7	Castaic Road at Lake Hughes Road	.36	A	.52	A	.42	A	.53	A	.06	.01
8	Castaic Road at Ridge Route	.38	A	.44	A	.40	A	.44	A	.02	.00
9	Sloan Canyon Road at Parker Road	.47	A	.48	A	0.92	E	.54	A	.45	.06

Note: **Bold** denotes significant impact.

Cumulative General Plan Buildout Conditions

Traffic conditions at General Plan buildout were forecast using the Santa Clarita Valley Consolidated traffic Model, which includes future land uses as permitted under the Los Angeles County and City of Santa Clarita General Plans. Buildout of the Santa Clarita Valley Area Plan Land Use Map is conservatively estimated to occur by 2035. Project-generated traffic at a capacity of 2,600 students was added to forecast buildout without-project traffic volumes.

Long-Range Highway Improvements

Previous studies of the Castaic area have identified roadway and intersection improvements that are needed to serve the long-range requirements of the area. Following is a summary of these long-range improvements that are required both with and without the proposed project:

- **I-5 Northbound Ramps and Lake Hughes Road Intersection:** Add a northbound left-turn lane, a northbound right-turn lane, a second eastbound left-turn lane, and a second westbound through lane.
- **I-5 Southbound Ramps and Parker Road Intersection:** Add a shared eastbound through/right-turn lane, restripe the shared westbound left-turn/through lane to a westbound through lane add a second westbound through lane, and adding two westbound left-turn lanes.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

- **I-5 Northbound Ramps and Ridge Route Road (Parker Road) Intersection:** Add a second northbound left-turn lane, a second northbound right-turn lane, a second eastbound through lane, and a second and third westbound through lane.
- **The Old Road and Sloan Canyon Road Intersection:** Restripe the southbound right-turn lane to a shared southbound through/right-turn lane, add a second southbound left-turn lane, a second eastbound through lane, and a shared westbound through/right-turn lane.
- **The Old Road and Parker Road Intersection:** Add a second northbound through lane, a second southbound through lane, a second eastbound through lane, and a westbound right-turn lane.
- **Castaic Road and Lake Hughes Road Intersection:** Restripe the northbound right-turn lane to a shared northbound through/right-turn lane, add a northbound left-turn lane, restripe the second southbound through lane to a shared southbound through/right-turn lane, add a third eastbound through lane, and restripe the westbound right-turn lane to a westbound through/right-turn lane.
- **Castaic Road and Ridge Route Road Intersection:** Add a second northbound left-turn lane, restripe the northbound right-turn lane to a shared northbound through/right-turn lane, restripe the southbound right-turn lane to a shared southbound through/right-turn lane and add a second eastbound left-turn lane and an eastbound right-turn lane.

The following improvements are included in the Los Angeles County Metropolitan Transportation Authority's Strategic Plan, a supplement to its 2009 Long Range Transportation Plan. Projects included in the Strategic Plan have not been funded but are considered promising, regionally significant highway and transit projects that could be implemented if additional funding becomes available.



- Castaic Cutoff: Castaic Road between Lake Hughes Road and San Francisquito Road
- I-5: Ramps/Intersection Improvements at Lake Hughes Road
- I-5: Ramps/Intersection Improvements at Parker Road
- The Old Road: Hillcrest Parkway to Lake Hughes Road (Metro 2010)

Traffic Conditions, General Plan Buildout, with Long-Range Highway Improvements, Without Project

Intersection LOS for General Plan buildout conditions with long-range highway improvements and without the proposed project are shown in Table 5.14-21.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-21
Intersection ICU and LOS, General Plan Buildout Without Project
with Long Range Highway Improvements

Intersection		AM Peak Hour		PM Peak Hour	
		ICU	LOS	ICU	LOS
1	Sloan Canyon Road at Quail Valley Road	.33	A	.29	A
2	Lake Hughes Road at Northbound I-5 Ramp	.47	A	.73	C
3	Parker Road at Southbound I-5 Ramp	.62	B	.48	A
4	Ridge Route at Northbound I-5 Ramp	.42	A	.57	A
5	Sloan Canyon Road at The Old Road	.52	A	.57	A
6	The Old Road at Parker Road	.51	A	.57	A
7	Castaic Road at Lake Hughes Road	.74	C	.74	C
8	Castaic Road at Ridge Route	.64	B	.58	A
9	Sloan Canyon Road at Parker Road	.34	A	.29	A

Buildout (2,600 Students) With-Project Conditions and with Long-Range Highway Improvements

Scenario 1

Intersection LOS for Scenario 1 (one public access route via the northern route plus gated emergency access via Romero Canyon Road) for the buildout condition—2,600 students capacity—is shown below in Table 5.14-22.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-22
Intersection ICU and LOS, Buildout Conditions
with Long-Range Highway Improvements, 2,600 Students, Scenario 1

Intersection		Without Project				With Project				Project Increment	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
		ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM	PM
1	Sloan Canyon Road at Quail Valley Road	.33	A	.29	A	.71	C	.35	A	.38	.06
2	Lake Hughes Road at Northbound I-5 Ramp	.47	A	.73	C	.49	A	.73	C	.02	.00
3	Parker Road at Southbound I-5 Ramp	.62	B	.48	A	.68	B	.48	A	.06	.00
4	Ridge Route at Northbound I-5 Ramp	.42	A	.57	A	.64	B	.57	A	.22	.00
5	Sloan Canyon Road at The Old Road	.52	A	.57	A	.50	A	.57	A	-.02	.00
6	The Old Road at Parker Road	.51	A	.57	A	1.01	F	.61	B	.50	.04
7	Castaic Road at Lake Hughes Road	.74	C	.74	C	.76	C	.74	C	.02	.00
8	Castaic Road at Ridge Route	.64	B	.58	A	.64	B	.58	A	.00	.00
9	Sloan Canyon Road at Parker Road	.34	A	.29	A	.84	D	.34	A	.50	.05

Note: **Bold** denotes significant impact.



Scenario 2

Intersection LOS for Scenario 2 (two public access routes, one via the northern route and one via the southern route plus gated emergency access via Romero Canyon Road) for the buildout condition— 2,600 students capacity – is shown below in Table 5.14-23.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-23
Scenario 2: Intersection ICU and LOS, Buildout Conditions
with Long-Range Highway Improvements (2,600 Students)

Intersection		Without Project				With Project				Project Increment	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
		ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM	PM
1	Sloan Canyon Road at Quail Valley Road	.42	A	.35	A	.69	B	.39	A	.27	.04
2	Lake Hughes Road at Northbound I-5 Ramp	.47	A	.73	C	.50	A	.73	C	.03	.00
3	Parker Road at Southbound I-5 Ramp	.62	B	.48	A	.63	B	.48	A	.01	.00
4	Ridge Route at Northbound I-5 Ramp	.42	A	.57	A	.45	A	.57	A	.03	.00
5	Sloan Canyon Road at The Old Road	.52	A	.57	A	.52	A	.57	A	.00	.00
6	The Old Road at Parker Road	.51	B	.57	A	.65	B	.58	A	.14	.01
7	Castaic Road at Lake Hughes Road	.74	C	.74	C	.77	C	.74	C	.03	.00
8	Castaic Road at Ridge Route	.64	B	.58	A	.66	B	.58	A	.02	.00
9	Sloan Canyon Road at Parker Road	.50	A	.49	A	.95	E	0.57	A	0.45*	0.08

Note: **Bold** denotes significant impact.

Access Roads

Access road scenarios and options are summarized above in Table 5.14-8. Following are analyses of intersection operation on proposed intersections on the northern route. No major intersections are planned for the southern route. The intersection of Sloan Canyon Road and Baringer Road on the southern route is planned to be curved so that the northern continuation of Sloan Canyon Road would be a cross-street to the school access route. The intersection of Baringer Road and Romero Canyon Road/Valley Creek Road would be a T-intersection with inbound school traffic turning right to continue northward on Romero Canyon Road/Valley Creek Road. However, Romero Canyon Road would be gated just south of that intersection so that there would be minimal movements through that intersection conflicting with school traffic. Therefore, operation of proposed intersections on the southern access route is not analyzed below.

Scenario 1 - Option A

Scenario 1 - Option A involves a northern public road access via Sloan Canyon Road, Mandolin Canyon Road, Harp Canyon Road, North Romero Canyon Road, and Valley Creek Road, and southern gated emergency access via Romero Canyon Road. The northern access would require widening to four lanes before the school capacity exceeded 1,600. Capacity enhancements at the intersections in the form of dedicated turn lanes and traffic signals would also be required. Peak hour traffic volumes meet the warrant criteria for traffic signal installation at the intersections of Mandolin Canyon Road/Harp Canyon Road, North Romero Canyon Road/Harp Canyon Road, and Romero Canyon Road/Valley Creek Road. Driveway access to the roadways near the intersections would be limited due to the provision of the dedicated turning lanes.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Intersection LOS at proposed intersections on the northern route in Scenario 1-Option A are presented in Table 5.14-24.

Table 5.14-24
Scenario 1 - Option A: Intersection LOS, Proposed Intersections,
AM Peak Hour

<i>Intersection</i>	<i>Delay (sec/veh)</i>	<i>LOS</i>
High School Dwy 3 (Main) and Valley Creek Rd	60.3	E
Mandolin Cyn Rd and Harp Cyn Rd	11.5	B
North Romero Cyn Rd and Harp Cyn Rd	16.9	B
Valley Creek Rd and North Romero Cyn Rd	10.3	B

Note: **Bold** denotes significant impact.

Scenario 1 - Option B

Scenario 1-Option B consists of a northern public road access via Sloan Canyon Road and Canyon Hill Road, eliminating the circuitous route described above for Option A. Option B also reduces the number of traffic signals needed on the access roadways from four to two. Sloan Canyon Road and Canyon Hill Road would each be developed as four-lane roadways. Gated emergency access would be provided via Romero Canyon Road south of the school site.

Scenario 2 - Option A

Scenario 2 Option A involves a northern public road access via Sloan Canyon Road, Mandolin Canyon Road, Harp Canyon Road, North Romero Canyon Road, and Valley Creek Road; a southern public access road via Valley Creek Road, Baringer Road, and Sloan Canyon Road; and southern gated emergency access via Romero Canyon Road.

Peak hour traffic volumes meet the warrant criteria for traffic signal installation at the intersections of Mandolin Canyon Road/Harp Canyon Road, North Romero Canyon Road/Harp Canyon Road, and Romero Canyon Road/Valley Creek Road. A level of service analysis for stop-sign control at the three aforementioned intersections determined that LOS F conditions would result without the signals. Therefore, traffic signals would be required at each of the three intersections, and driveway access to the roadways in the vicinity of the intersections would be limited due to the provision of the dedicated turning lanes.

A summary of the intersection LOS for Scenario 2 - Option A is provided in Table 5.14-25.



5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-25
Scenario 2 - Option A: Intersection LOS, Proposed Intersections,
AM Peak Hour

<i>Intersection</i>	<i>Delay (sec/veh)</i>	<i>LOS</i>
High School Dwy 3 (Main) and Valley Creek Road	55.8	E
Mandolin Canyon Road and Harp Canyon Road	13.6	B
North Romero Canyon Road and Harp Canyon Road	22.5	C
Valley Creek Road and North Romero Canyon Road	18.8	B

Note: **Bold** denotes significant impact.

Scenario 2 - Option B

With Scenario 2 - Option B, a direct route to the school site is provided via Canyon Hill Road, thus eliminating the circuitous route described above for Option A. Option B also reduces the number of traffic signals needed on the access roadways from four to two. Intersection LOS for the proposed intersections is provided in Table 5.14-26.

Table 5.14-26
Scenario 2 - Option B: Intersection LOS, Proposed Intersections,
AM Peak Hour

<i>Intersection</i>	<i>Delay (sec/veh)</i>	<i>LOS</i>
High School Dwy 3 (Main)/Canyon Hill Rd and Valley Creek Rd	39.6	D
Canyon Hill Rd/Sloan Cyn Rd and Mandolin Cyn Rd	28.4	C

Note: **Bold** denotes significant impact.

Impact Summary

Significant impacts identified for each school capacity, access road scenario, and time horizon analyzed are summarized in Table 5.14-27. Existing plus project traffic analysis consisted of adding school-generated trips to existing traffic volumes and did not project traffic volumes on roadways that do not currently exist.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-27
Impacts Summary

<i>Year</i>	<i>School Capacity</i>	<i>Scenario*</i>	<i>Intersections Significantly Impacted</i>
Existing plus Project	1,600	1	- The Old Road at Parker Road - Sloan Canyon Road at Parker Road
		2	None
	2,600	1	- Sloan Canyon Road at Quail Valley Road - Parker Road at Southbound I-5 Ramp - Ridge Route at Northbound I-5 Ramp - The Old Road at Parker Road - Sloan Canyon Road at Parker Road
		2	None
Short Term (2014)	1,600	1	- Sloan Canyon Road at Quail Valley Road - Parker Road at Southbound I-5 Ramp - The Old Road at Parker Road - Sloan Canyon Road at Parker Road
		2	Sloan Canyon Road at Parker Road
	2,600	1	- Sloan Canyon Road at Quail Valley Road - Parker Road at Southbound I-5 Ramp - Parker Road at Northbound I-5 Ramp - The Old Road at Parker Road - Sloan Canyon Road at Parker Road
		2	Sloan Canyon Road at Parker Road
Buildout with Long-Range Highway Improvements	2,600	1	The Old Road at Parker Road
		2	Sloan Canyon Road at Parker Road

*For either Option A or Option B



Full-Capacity Stadium Event

The proposed project would include a 5,000-seat football stadium in later phases of school operation. The stadium would be a venue for special events and is not expected to generate a significant number of trips on a daily basis throughout the year. A Friday night football game generally represents the maximum traffic generation for a school outside of normal weekday operation. Football generally extends from September through the middle of November (less than three months). Depending on team playoff status, a high school could host between four and five varsity home games per school year.

Trip generation for a typical event would range from approximately 833 to 1,000 inbound trips, and a full-capacity event would generate approximately 1,430 inbound trips (based on 3.5 people per vehicle). Assuming that all these trips occur within a one-hour period, this trip generation rate is less than the typical morning inbound trip generation for the school (1,480 trips). Therefore, a full-capacity stadium event would generate slightly less traffic than the school's morning peak hour traffic. Due to the limited frequency of stadium events, mitigation measures that involve modifications to lane geometry would not be appropriate. The District would coordinate with the Los Angeles County Sheriff's Department to organize traffic control assistance during full-capacity events similar to the process for stadium events at existing high schools.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

IMPACT 5.14-2: PROJECT-RELATED TRIP GENERATION IN COMBINATION WITH EXISTING AND PROPOSED CUMULATIVE DEVELOPMENT WOULD NOT CAUSE CMP HIGHWAYS TO EXCEED COUNTY CONGESTION MANAGEMENT AGENCY SERVICE STANDARDS. [THRESHOLD T-2]

Impact Analysis: The congestion management program (CMP) in effect in Los Angeles County was issued by the Los Angeles county Metropolitan Transportation Authority (Metro) in 2010. Selected arterial roadways and all freeways in the County are designated elements of the CMP Highway System. There are no CMP arterial roadways in the traffic study area; the only CMP roadway in the study area is I-5.

The CMP requires that a proposed development address two major types of traffic impacts: the project's impacts on the CMP highway system and the project's impacts on the local and regional transit systems. According to the CMP guidelines, the geographical area examined in a CMP traffic impact analysis consists of the CMP monitoring locations that meet the following criteria:

- CMP intersections where the proposed project will add 50 or more trips during the AM or PM weekday peak hours (of adjacent street traffic).
- Mainline freeway locations where the project will add 150 or more trips, in either direction, during either the AM or PM weekday peak hours.

CMP Intersections

The CMP intersection nearest to the project site is the Chiquito Canyon Road/SR-126 intersection about five miles south of the project site. Students living near this intersection currently pass through this location to access their current schools. Therefore, the project would result in a negligible amount of new traffic to the Chiquito Canyon Road/SR-126 intersection. A CMP evaluation of this location is therefore not required since the project would add less than 50 peak hour trips to the intersection.

Mainline Freeway Locations

The nearest mainline freeway CMP monitoring location is the segment of I-5 north of SR-126. As shown in Table 5.14-28, below, the proposed project is forecast to add no more than 37 peak hour directional trips to this location. A CMP mainline freeway analysis is not required since the project would add less than 150 peak hour direction trips to the freeway segment. An LOS analysis of freeway segments near the project site showed that no significant impacts to operation of the I-5 were identified (see Table 5.14-28).

Transit Impacts

Another component of the CMP transportation impact analysis is a review of transit impacts. Within the Santa Clarita Valley, high school bus service is provided by Santa Clarita Transit (SCT) with special routes (600 Series). Because student enrollment continues to grow and the school district regularly opens new schools, SCT school-oriented routes and schedules are adjusted annually. The proposed school will require additional school-oriented routes (Fajans & Associates 2006). To facilitate the use of transit, the District is coordinating with SCT about the location of bus stops at the proposed project site.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-28
I-5 Freeway Existing Volume to Capacity Ratios

Segment	Lanes Each Direction	Capacity Each Direction	AM Peak Hour				PM Peak Hour			
			Northbound		Southbound		Northbound		Southbound	
			Vol	V/C	Vol	V/C	Vol	V/C	Vol	V/C
North of Lake Hughes	4M ¹	8,000	1,300	.163	1,400	.175	2,200	.275	1,800	.225
Between Lake Hughes and Parker	4M	8,000	1,400	.175	1,700	.213	2,500	.313	2,000	.250
Between Parker and Hasley Canyon	4M	8,000	1,700	.213	2,200	.275	3,100	.388	2,400	.300
Between Hasley Canyon and SR-126	4M	8,000	2,300	.288	3,100	.388	4,100	.513	3,000	.375
Between SR-126 and Rye Canyon	4M	8,000	3,200	.400	3,500	.438	4,400	.550	4,200	.525
Between Rye Canyon and Magic Mountain	4M	8,000	3,200	.400	4,400	.550	4,400	.550	5,400	.675
Between Magic Mountain and Valencia	4M	8,000	4,100	.513	4,600	.575	5,200	.650	5,600	.700
Between Valencia and McBean	4M	8,000	5,200	.650	5,600	.700	6,000	.750	6,400	.800
Between McBean and Pico/Lyons	4M	8,000	5,200	.650	6,200	.775	6,300	.788	6,700	.838

¹ M = Mixed-Flow/General Purpose Lane (Capacity = 2,000 vehicles per hour)

Capacities derived from Caltrans Performance Measurement System (PeMS) data and through discussions with Caltrans staff.



Table 5.14-29
Freeway Volumes and V/C Ratios: 2014 Conditions with 2,600-Student School

Segment	Lanes Each Direction	Capacity Each Direction	2014 Without Project		2014 With Project		Project Increment
			Volume	V/C	Volume	V/C	
Northbound – AM Peak Hour							
North of Lake Hughes	4M	8,000	1,400	0.175	1,400	0.175	0.000
Between Lake Hughes and Parker	4M	8,000	1,500	0.188	1,500	0.188	0.000
Between Parker and Hasley Canyon	4M	8,000	1,800	0.225	2,482	0.310	0.085
Between Hasley Canyon and SR-126	4M	8,000	2,500	0.313	2,537	0.317	0.004
Between SR-126 and Rye Canyon	4M	8,000	3,500	0.438	3,519	0.440	0.002

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-29
Freeway Volumes and V/C Ratios: 2014 Conditions with 2,600-Student School

Segment	Lanes Each Direction	Capacity Each Direction	2014 Without Project		2014 With Project		Project Increment
			Volume	V/C	Volume	V/C	
Between Rye Canyon and Magic Mtn	4M	8,000	3,500	0.438	3,519	0.440	0.002
Between Magic Mtn and Valencia	4M	8,000	4,400	0.550	4,410	0.551	0.001
Between Valencia and McBean	4M	8,000	5,600	0.700	5,605	0.701	0.001
Between McBean and Pico/Lyons	4M	8,000	5,600	0.700	5,603	0.700	0.000
Northbound – PM Peak Hour							
North of Lake Hughes	4M	8,000	2,400	0.300	2,400	0.300	0.000
Between Lake Hughes and Parker	4M	8,000	2,700	0.338	2,700	0.338	0.000
Between Parker and Hasley Canyon	4M	8,000	3,300	0.413	3,372	0.422	0.009
Between Hasley Canyon and SR-126	4M	8,000	4,400	0.550	4,404	0.551	0.001
Between SR-126 and Rye Canyon	4M	8,000	4,800	0.600	4,802	0.600	0.000
Between Rye Canyon and Magic Mtn	4M	8,000	4,800	0.600	4,802	0.600	0.000
Between Magic Mtn and Valencia	4M	8,000	5,600	0.700	5,601	0.700	0.000
Between Valencia and McBean	4M	8,000	6,500	0.813	6,500	0.813	0.000
Between McBean and Pico/Lyons	4M	8,000	6,800	0.850	6,800	0.850	0.000
Southbound – AM Peak Hour							
401. North of Lake Hughes	4M	8,000	1,500	0.188	1,500	0.188	0.000
402. Between Lake Hughes and Parker	4M	8,000	1,800	0.225	1,800	0.225	0.000
403. Between Parker and Hasley Canyon	4M	8,000	2,400	0.300	2,854	0.357	0.057
404. Between Hasley Canyon and SR-126	4M	8,000	3,300	0.413	3,325	0.416	0.003
405. Between SR-126 and Rye Canyon	4M	8,000	3,800	0.475	3,813	0.477	0.002

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-29
Freeway Volumes and V/C Ratios: 2014 Conditions with 2,600-Student School

Segment	Lanes Each Direction	Capacity Each Direction	2014 Without Project		2014 With Project		Project Increment
			Volume	V/C	Volume	V/C	
406. Between Rye Canyon and Magic Mtn	4M	8,000	4,800	0.600	4,807	0.601	0.001
407. Between Magic Mtn and Valencia	4M	8,000	5,000	0.625	5,004	0.626	0.001
408. Between Valencia and McBean	4M	8,000	6,000	0.750	6,002	0.750	0.000
409. Between McBean and Pico/Lyons	4M	8,000	6,700	0.838	6,701	0.838	0.000
Southbound – PM Peak Hour							
401. North of Lake Hughes	4M	8,000	1,900	0.238	1,900	0.238	0.000
402. Between Lake Hughes and Parker	4M	8,000	2,200	0.275	2,200	0.275	0.000
403. Between Parker and Hasley Canyon	4M	8,000	2,600	0.325	2,684	0.336	0.011
404. Between Hasley Canyon and SR-126	4M	8,000	3,200	0.400	3,205	0.401	0.001
405. Between SR-126 and Rye Canyon	4M	8,000	4,500	0.563	4,503	0.563	0.000
406. Between Rye Canyon and Magic Mtn	4M	8,000	5,800	0.725	5,802	0.725	0.000
407. Between Magic Mtn and Valencia	4M	8,000	6,000	0.750	6,001	0.750	0.000
408. Between Valencia and McBean	4M	8,000	6,900	0.863	6,901	0.863	0.000
409. Between McBean and Pico/Lyons	4M	8,000	7,200	0.900	7,200	0.900	0.000

MF (or M) = Mixed-Flow/General Purpose Lane (Capacity = 2,000 vehicles per hour)
Capacities derived from PeMS data and through discussions with Caltrans staff.



5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

IMPACT 5.14-3: **THE PROJECT WOULD NOT SUBSTANTIALLY INCREASE HAZARDS DUE TO A DESIGN FEATURE (E.G., SHARP CURVES OR DANGEROUS INTERSECTIONS). THE PROJECT WOULD NOT INTRODUCE INCOMPATIBLE USES TO AREA ROADWAYS, SUCH AS FARM EQUIPMENT. [THRESHOLD T-4]**

Impact Analysis: The four project access driveways would intersect with Valley Creek Road perpendicularly. Driveway 3 would intersect with Valley Creek Road opposite the intersection of Valley Creek Road and Canyon Hill Road (in Option B under either Scenario 1 or Scenario 2). Distances to the intersections of the three other driveways with Valley Creek Road from the intersection of Valley Creek Road and Canyon Hill Road would be: Driveway 1, 1,100 feet northwest; Driveway 2, 550 feet north; and Driveway 4, 500 feet south. Therefore, proposed intersections of driveways with Valley Creek Road would be adequately spaced so that they would not create conflicting turn movements. The project would not add incompatible uses to area roadways such as farm equipment.

IMPACT 5.14-4 **TRAFFIC AND PEDESTRIAN HAZARDS WOULD BE MITIGATED PER CALTRANS'S SCHOOL AREA PEDESTRIAN SAFETY MANUAL. [THRESHOLD T-5]**

Impact Analysis: The project would increase the numbers of vehicle, pedestrian, and bicycle trips on roadways in and near the project site. Therefore, project-generated trips could result in increased traffic conflicts between vehicles and pedestrians and bicycles.

Traffic Control Devices

The District would install traffic signals at the following intersections:

Option A (Scenario 1 or Scenario 2)

- Mandolin Canyon Road at Harp Canyon Road
- Harp Canyon Road at Romero Canyon Road
- Romero Canyon Road at Valley Creek Road
- Valley Creek Road at High School Driveway 3

Option B (Scenario 1 or Scenario 2)

- Canyon Hill Road/Mandolin Canyon Road
- Canyon Hill Road/Valley Creek Road

School Area Warning Signs and Markings

Warning signs and markings for school areas are prescribed in Chapter 10, *School Area Pedestrian Safety*, of the Caltrans Traffic Manual.

School area warning signs on reflective yellow backgrounds would be required at the following locations:

- On the southbound side of Valley Creek Road between the northern school site boundary and 500 feet north of the school site boundary.
- On the northbound side of Valley Creek Road between the southern school site boundary and 500 feet south of the school site boundary.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

- On the westbound side of Canyon Hill Road between the eastern school site boundary and 500 feet east of the school site boundary.

All of the crosswalks to be painted at each of the following intersections shall be painted as reflective yellow school crosswalks:

- Canyon Hill Road at Valley Creek Road (all four legs of intersection)
- Valley Creek Road at Driveway 1 (south leg of intersection)
- Valley Creek Road at Driveway 2 (west leg of intersection)
- Valley Creek Road at Driveway 4 (west leg of intersection)

In Scenario 2, if pedestrian school access is provided between the cul-de-sac at the south end of North Romero Canyon Road and Valley Creek Road, then the following additional yellow school crosswalks shall be painted:

- Valley Creek Road at Driveway 1 (east leg of intersection)
- Valley Creek Road at Driveway 2 (north leg of intersection)

The locations of required yellow school crosswalks at Driveways 2 and 4 assumes that the land abutting the east end of the project site is not developed with land uses that would lead to students walking across Valley Creek Road at those intersections—such as residential uses or a park. No cumulative projects are proposed for that land. Any future development of that land with land uses that could create demand for student pedestrian access across Valley Creek Road at Driveways 2 and 4 would require painting of additional yellow school crosswalks at those two intersections.

The project would install warning signs and markings in compliance with Chapter 10 (*School Area Pedestrian Safety*) of the Caltrans Traffic Manual.

Student Drop-off and Pick-up Areas

The high school would provide on-campus student drop-off/pick-up in two areas at the front of the school. One-way circulation patterns would ensure consistent flow of traffic through the site and enhance pedestrian safety. Approximately 850 feet of curb space would accommodate 34 cars at a time. A large proportion of students are anticipated to rely on someone else for rides to and from school. The following guidelines, which are derived from evaluations of existing school operations, have been utilized to estimate the space needed for drop-off and pick-up operations for the proposed project.

- AM and PM drop-off/pick-up time periods: 20 minutes
- Dwell time: 45 seconds
- Vehicles arriving for drop-off or pick-up: 33 percent of student population
- Curb space per stopped vehicle: 25 feet

For a 2,600-student school, the guidelines listed above result in the following curb space requirements:

- Vehicles for drop-off or pick-up: 858
- Arrival rate: 43 vehicles per minute
- Service rate: 1.33 vehicles per minute per 25 feet

A minimum of 800 feet of curb space would be required to accommodate the estimated arrival rate of drop-off and pick-up vehicles. However, additional space is recommended when feasible to accommodate



5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

nonuniform arrival rates or circumstances that result in longer than anticipated dwell times. The provision of approximately 850 feet would accommodate approximately 34 vehicles and would be sufficient to accommodate the full school enrolment of 2,600 students.

Crosswalks and school personnel on patrol would endure safe access to school campus from the drop-off and pick-up areas.

IMPACT 5.14-5 THE PROJECT SITE WOULD BE EASILY ACCESSIBLE FROM PROPOSED ARTERIAL ROADWAYS. [THRESHOLD T-6 (PART)]

Impact Analysis: Sloan Canyon Road is classified a secondary highway eastward from its intersection with Quail Valley Road which is about 1.3 miles east of the project site. Hillcrest Parkway, from which the southern access route in Scenario 2 would provide access, is also classified a secondary highway and is about 1.1 miles south of the site. Public roadways that would provide access to the project are summarized above in Table 5.14-8. The project would provide adequate access from arterial roadways.

IMPACT 5.14-6 THE PROJECT WOULD PROVIDE MINIMUM PERIPHERAL VISIBILITY MAINTAINED FOR DRIVEWAYS PER CALTRANS'S HIGHWAY DESIGN MANUAL. [THRESHOLD T-6 (PART)]

Impact Analysis: The four project driveways would provide access from Valley Creek Road. Stopping sight distances for different speeds are provided in Table 201.1 of the Caltrans *Highway Design Manual*. The speed limit on Valley Creek Road would be 25 miles per hour when school was in session and 35 to 40 miles per hour at other times. The following analysis is for the 25 miles per hour speed limit when school is in session. The stopping sight distance at 25 miles per hour is 150 feet. The layout of intersections of school driveways with Valley Creek Road is shown in Figure 4-1, *Conceptual Site Plan*.

- **Driveway 1:** The segment of Valley Creek Road east of the intersection with Driveway 1 is straight, and the segment west of the driveway curves gently southward. Drivers approaching from the west or the east would have 150 feet stopping sight distance from the intersection.
- **Driveway 2:** The segment of Valley Creek Road south of the intersection with Driveway 2 is straight, and the segment north of the driveway curves westward. Drivers approaching from the south or the north would have 150 feet stopping sight distance from the intersection.
- **Driveway 3:** The segment of Valley Creek Road south of the intersection with Driveway 3 is straight, and the segment north of the driveway curves very slightly westward. Northbound and southbound drivers would have adequate stopping sight distance.
- **Driveway 4:** Valley Creek Road extends straight north-south from both sides of this intersection. Northbound and southbound drivers would have adequate stopping sight distance.

All four project driveways would have traffic controls at their intersections with Valley Creek Road—cross-street stops at Driveways 1, 2, and 4, and a traffic signal at Driveway 3. Thus, stopping sight distance analysis for drivers approaching Valley Creek Road on one of the project driveways is not required.

IMPACT 5.14-7 THE PROJECT WOULD PROVIDE ADEQUATE EMERGENCY ACCESS. [THRESHOLD T-8]

Impact Analysis: In Scenario 1 the project would provide emergency access via two routes:

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

- The eastern public road access route (Sloan Canyon Road–Mandolin Canyon Road–Harp Canyon Road–North Romero Canyon Road–Valley Creek Road in Option A or Sloan Canyon Road–Canyon Hill Road in Option B).
- Gated emergency access via Romero Canyon Road to Hasley Canyon Road to the south. The gate must be at least 20 feet wide, and must be approved by the Los Angeles County Fire Department. While the proposed gated access would provide adequate emergency access, Scenario 2, in which two public road access routes to the school would be developed, would provide superior emergency access and is preferred.

In Scenario 2 the project would also provide emergency access via two routes.

- The eastern public road access route (Sloan Canyon Road–Mandolin Canyon Road–Harp Canyon Road–North Romero Canyon Road–Valley Creek Road in Option A or Sloan Canyon Road–Canyon Hill Road in Option B).
- The southern public road access route (Valley Creek Road/Romero Canyon Road–Baringer Road–Sloan Canyon Road)
- The gated emergency access via Romero Canyon Road would be developed in Scenario 2 and would be used as an interim emergency access until the southern public road access route was completed.

The project would provide adequate emergency access in all four access road scenarios and options considered.



IMPACT 5.14-8 **THE PROJECT WOULD NOT CONFLICT WITH ADOPTED POLICIES, PLANS, OR PROGRAMS REGARDING PUBLIC TRANSIT, BICYCLE, OR PEDESTRIAN FACILITIES, OR OTHERWISE DECREASE THE PERFORMANCE OR SAFETY OF SUCH FACILITIES. [THRESHOLD T-9]**

Impact Analysis:

Bicycle and Pedestrian Facilities

Proposed roadways would provide Class III bike lanes (striped, but not signed) in the roadways and five-foot sidewalks alongside the roadways. Future multipurpose trails may also be provided by others alongside proposed roadways.

Public Transit

High schools in the District are provided school bus service by Santa Clarita Transit (SCT), and several high schools in the District are also along regular SCT bus routes. The proposed school would require additional school-oriented routes (Fajans & Associates 2006). To facilitate the use of transit, the District is coordinating with SCT regarding the location of bus stops adjacent to the proposed project site.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

IMPACT 5.14-9 ADEQUATE PARKING WOULD BE PROVIDED FOR THE PROPOSED PROJECT. [THRESHOLD T-6].

Impact Analysis: The proposed project would provide 821 parking spaces for staff, students, and visitors. Parking would be provided in five lots arranged in an arc along the east side of the campus. Clockwise from the north the parking lots would consist of:

- Event/Staff Parking: 103 spaces
- Event/Staff Parking: 175 spaces
- Visitor/Student Parking: 353 spaces
- Event Parking: 122 spaces
- Event Parking: 68 spaces

A typical football game would generate less than half of a capacity attendance over 80 percent of the time. The stadium would have 5,000 seats, and for the typical event, attendance of approximately 2,500 persons is assumed. Due to varying vehicle occupancies and drop-off rates for typical versus full-capacity events, a typical stadium event would require approximately 670 to 800 parking spaces, and a full-capacity event would require approximately 1,320 parking spaces.

Space for overflow parking would be provided on two evaporation basins on the south end of the campus (Basins A1 and A2). The overflow parking area would be used only when needed for large events such as football games or graduation ceremonies. These events are held during the dry season when the basins are not used for stormwater retention. The project would provide adequate parking for daily school operations and for events such as stadium events, schoolwide events such as open house, and grade-specific events such as graduations.

5.14.4 Cumulative Impacts

Traffic Impacts

Cumulative traffic impacts are analyzed above under Impact 5.14-1.

Impacts Related to Project Design (Design Hazards and Traffic and Pedestrian Safety)

No intersections of other driveways with Valley Creek Road, the road that would provide access to school driveways, are planned for other projects next to the project site. Warning signage and pavement markings for schools are specific to schools. There are no existing schools near the project site, and the nearest proposed school is the proposed elementary school 0.5 mile east of the project site. Potential design-related hazards of the proposed elementary school would not combine with potential hazards from the proposed project to result in cumulative impacts.

5.14.5 Existing Regulations and Standard Conditions

State

- Caltrans Traffic Manual Chapter 10: School Area Pedestrian Safety
- Caltrans Highway Design Manual

Los Angeles County

- Los Angeles County Department of Public Works Traffic Impact Analysis Guidelines

5.14.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.14-2, 5.14-3, 5.14-4, 5.14-5, 5.14-6, 5.14-7, 5.14-8, and 5.14-9.

Without mitigation, the following impacts would be **potentially significant**:

- Impact 5.14-1 Project-generated traffic would result in unacceptable levels of service at several existing study area intersections.

5.14.7 Mitigation Measures

Impact 5.14-1

T-1 If Scenario 1 is chosen for development of school access roads, at least six months before opening of the school, the District shall request approval of the Los Angeles County Department of Public Works for installation of the following improvements. Upon approval by the Los Angeles County Department of Public Works, the District would be responsible for the cost of all of the following improvements.

- Sloan Canyon Road at Quail Valley Road
 - Stripe a second westbound through lane (to transition to a single westbound lane just west of the intersection)
 - Stripe a second eastbound through lane
 - Install a traffic signal
- Parker Road at Southbound I-5 Ramp
 - Add an eastbound right-turn lane
 - Install a traffic signal
- Ridge Route Road at Northbound I-5 Ramp
 - Install a traffic signal
- The Old Road at Parker Road
 - Add a westbound left-turn lane
 - Add an eastbound left-turn lane
 - Install a traffic signal
- Sloan Canyon Road at Parker Road
 - Stripe a northbound right-turn lane
 - Stripe a westbound left-turn lane
 - Stripe a shared westbound left turn/right turn lane
 - Install a traffic signal

T-2 Student enrollment at the campus shall not exceed 1,600 students unless the District has completed one of the following:



5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

- 1) Widen the pavement and restripe the northern public access route to provide four lanes of travel (two lanes in each direction); or
- 2) Complete the southern public access route (Scenario 2); or
- 3) Make a finding that sufficient other roads in the area have been constructed by others and that these roads will provide adequate access and travel capacity to accommodate the ultimate school capacity of 2,600 students. This finding shall be made by the Governing Board at a public meeting based on an analysis of the available road network and traffic conditions at that time.

T-3 Student enrollment at the campus shall not exceed 1,600 students unless the District has implemented staggered start times, consisting of three start times with each of the times at least 30 minutes apart. At least 25 percent of the student enrollment shall participate in each of the three start times.

T-4 If Scenario 2 is chosen for development of school access roads, at least six months before opening of the school, the District shall request approval of the Los Angeles County Department of Public Works for installation of a traffic signal and striping a northbound right-turn lane at the intersection of Sloan Canyon Road and Parker Road.

5.14.8 Level of Significance After Mitigation

Existing Plus Project

Scenario 1

LOS for study area intersections for Scenario 1 in existing conditions without the project and in existing plus project conditions with mitigation implemented are shown in Table 5.14-30.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-30
Scenario 1: Existing Plus Project
Intersection Traffic Impacts with Mitigation

Intersection	Existing Conditions without Project				Existing Conditions plus Project with Mitigation				Project Increment (Mitigated)	
	AM		PM		AM		PM		AM	PM
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS		
1,600-Student Capacity										
Sloan Canyon Road at Quail Valley Road	0.26	A	0.23	A	0.49	A	0.26	A	0.23	0.03
The Old Road at Parker Road	0.51	A	0.49	A	0.74	C	0.46	A	0.23	-0.03
Sloan Canyon Road at Parker Road	0.28	A	0.25	A	0.51	A	0.22	A	0.23	-0.03
2,600Student Capacity										
Sloan Canyon Road at Quail Valley Road	0.26	A	0.23	A	0.67	B	0.28	A	0.41	0.05
Parker Road and Southbound I-5 Ramps	0.59	A	0.48	A	0.86	D	0.52	A	0.27	0.04
Ridge Route Road at Northbound I-5 Ramps	0.46	A	0.55	A	0.85	D	0.56	A	0.39	0.01
The Old Road at Parker Road	0.51	A	0.49	A	0.96	E	0.48	A	0.45	-0.01
Sloan Canyon Road at Parker Road	0.28	A	0.25	A	0.70	B	0.24	A	0.42	-0.01
Bold: Significant impact remaining after mitigation.										



Scenario 2

Traffic impacts under Scenario 2 with 1,600 and 2,600 students would be less than significant.

Short-Term (2014)

Scenario 1

1,600 Students Capacity

Intersection LOS for study area intersections with-project conditions in 2014 at capacity of 1,600 students with mitigation implemented is shown below in Table 5.14-31.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-31
Scenario 1: Short-Term 2014 With-Project (1,600 Students)
Intersection LOS with Mitigation

<i>Intersection</i>		<i>Short-Range Conditions without Project</i>				<i>Short-Range Conditions with 1,600 Student Project with Mitigation</i>			
		<i>AM Peak Hour</i>		<i>PM Peak Hour</i>		<i>AM Peak Hour</i>		<i>PM Peak Hour</i>	
		<i>ICU</i>	<i>LOS</i>	<i>ICU</i>	<i>LOS</i>	<i>ICU</i>	<i>LOS</i>	<i>ICU</i>	<i>LOS</i>
1	Sloan Canyon Road at Quail Valley Road	.41	A	.35	A	.52	A	.33	A
2	Lake Hughes Road at Northbound I-5 Ramp	.34	A	.51	A	.33	A	.51	A
3	Parker Road at Southbound I-5 Ramp	.71	C	.60	A	.74	C	.62	B
4	Ridge Route at Northbound I-5 Ramp	.52	A	.64	B	.74	C	.66	B
5	Sloan Canyon Road at The Old Road	.41	A	.46	A	.41	A	.45	A
6	The Old Road at Parker Road	.67	B	.66	B	.86	D	.58	A
7	Castaic Road at Lake Hughes Road	.36	A	.52	A	.37	A	.52	A
8	Castaic Road at Ridge Route	.38	A	.44	A	.38	A	.44	A
9	Sloan Canyon Road at Parker Road	.47	A	.48	A	.62	B	.31	A

2,600 Students Capacity

Intersection LOS for study area intersections for with-project conditions in 2014 at capacity of 2,600 students with mitigation implemented is shown below in Table 5.14-32. The mitigation referenced in the table is Mitigation Measure T-1, which was referenced in Table 5.14-30 for 1,600-student enrollment. As shown below, with 2,600 students and with mitigation implemented, significant impacts would occur at four of the five intersections where significant impacts would occur *before* mitigation at 1,600 student enrollment. Implementation of staggered start times, as required under Mitigation Measure T-3, would reduce impacts to the four intersections identified in Table 5.14-32 where significant impacts would remain after mitigation. However, significant impacts would still occur after implementation of staggered start times.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-32
Scenario 1: Short-Term 2014 With-Project (2,600 Students)
Intersection LOS with Mitigation

Intersection		Short-Range Conditions Without Project				Short-Range Conditions With 2,600 Student Project With Mitigation			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
1	Sloan Canyon Road at Quail Valley Road	.41	A	.35	A	.71	C	.35	A
2	Lake Hughes Road at Northbound I-5 Ramp	.34	A	.51	A	.35	A	.51	A
3	Parker Road at Southbound I-5 Ramp	.71	C	.60	A	.92	E	.64	B
4	Ridge Route at Northbound I-5 Ramp	.52	A	.64	B	.91	E	.68	B
5	Sloan Canyon Road at The Old Road	.41	A	.46	A	.45	A	.45	A
6	The Old Road at Parker Road	.67	B	.66	B	1.08	F	.60	A
7	Castaic Road at Lake Hughes Road	.36	A	.52	A	.40	A	.53	A
8	Castaic Road at Ridge Route	.38	A	.44	A	.38	A	.44	A
9	Sloan Canyon Road at Parker Road	.47	A	.48	A	.81	D	.33	A

Bold: Significant impact remaining after mitigation.

Scenario 2

Intersection LOS for study area intersections in Scenario 2 with-project conditions in 2014 at capacities of 1,600 and 2,600 students with mitigation implemented are shown in Table 5.14-33.



5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-33
Scenario 2: Short-Term 2014 With-Project (1,600 and 2,600 Students)
Intersection LOS with Mitigation

Intersection	Existing Conditions without Project				Existing Conditions plus Project with Mitigation				Project Increment (Mitigated)	
	AM		PM		AM		PM		AM	PM
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS		
1,600-Student Capacity										
Sloan Canyon and Parker Road	.47	A	.48	A	.45	C	.41	A	-.02	-.07
2,600-Student Capacity										
Sloan Canyon and Parker Road	0.47	A	.48	A	.59	C	.43	A	.12	-.05

Buildout

Traffic impacts at buildout were analyzed for the school at 2,600-student capacity only.

Scenario 1

Intersection LOS for study area intersections in Scenario 1 with-project conditions (2,600-student capacity) at buildout with mitigation implemented are shown in Table 5.14-34.

Table 5.14-34
Scenario 1: Buildout With-Project (2,600 Students)
Intersection LOS with Mitigation

Intersection	Existing Conditions without Project				Existing Conditions plus Project with Mitigation				Project Increment (Mitigated)	
	AM		PM		AM		PM		AM	PM
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS		
The Old Road and Parker Road	0.51	A	0.57	A	0.98	E	0.57	A	0.47	0.00
Bold: Significant impact remaining after mitigation.										

Scenario 2

Intersection LOS for study area intersections in Scenario 2 with-project conditions (2,600-student capacity) at buildout with mitigation implemented are shown in Table 5.14-35.

5. Environmental Analysis

TRANSPORTATION AND TRAFFIC

Table 5.14-35
Scenario 2: Buildout With-Project (2,600 Students)
Intersection LOS with Mitigation

Intersection	Existing Conditions without Project				Existing Conditions plus Project with Mitigation				Project Increment (Mitigated)	
	AM		PM		AM		PM		AM	PM
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS		
Sloan Canyon Road and Parker Road	0.50	A	0.49	A	0.60	A	0.44	A	0.10	-0.05

Bold: Significant impact remaining after mitigation.

Summary of Significant Impacts after Mitigation

Significant and unavoidable impacts are summarized in Table 5.14-36.

Table 5.14-36
Significant and Unavoidable Impacts

Year	School Capacity, Students	Scenario	Option	Significant and Unavoidable Traffic Impacts
Existing plus Project	1,600	1	Either option	None
		2	Either option	None
	2,600	1	Either option	- Parker Road at Southbound I-5 Ramp - Ridge Route at Northbound I-5 Ramp - The Old Road at Parker Road
		2	Either option	None
Short Term (2014)	1,600	1	Either option	None
		2	Either option	Sloan Canyon Road at Parker Road
	2,600	1	Either option	- Parker Road at Southbound I-5 Ramp - Ridge Route at Northbound I-5 Ramp - The Old Road at Parker Road
		2	Either option	None
Buildout with Long-Range Highway Improvements	2,600	1	Either option	The Old Road at Parker Road
		2	Either option	None

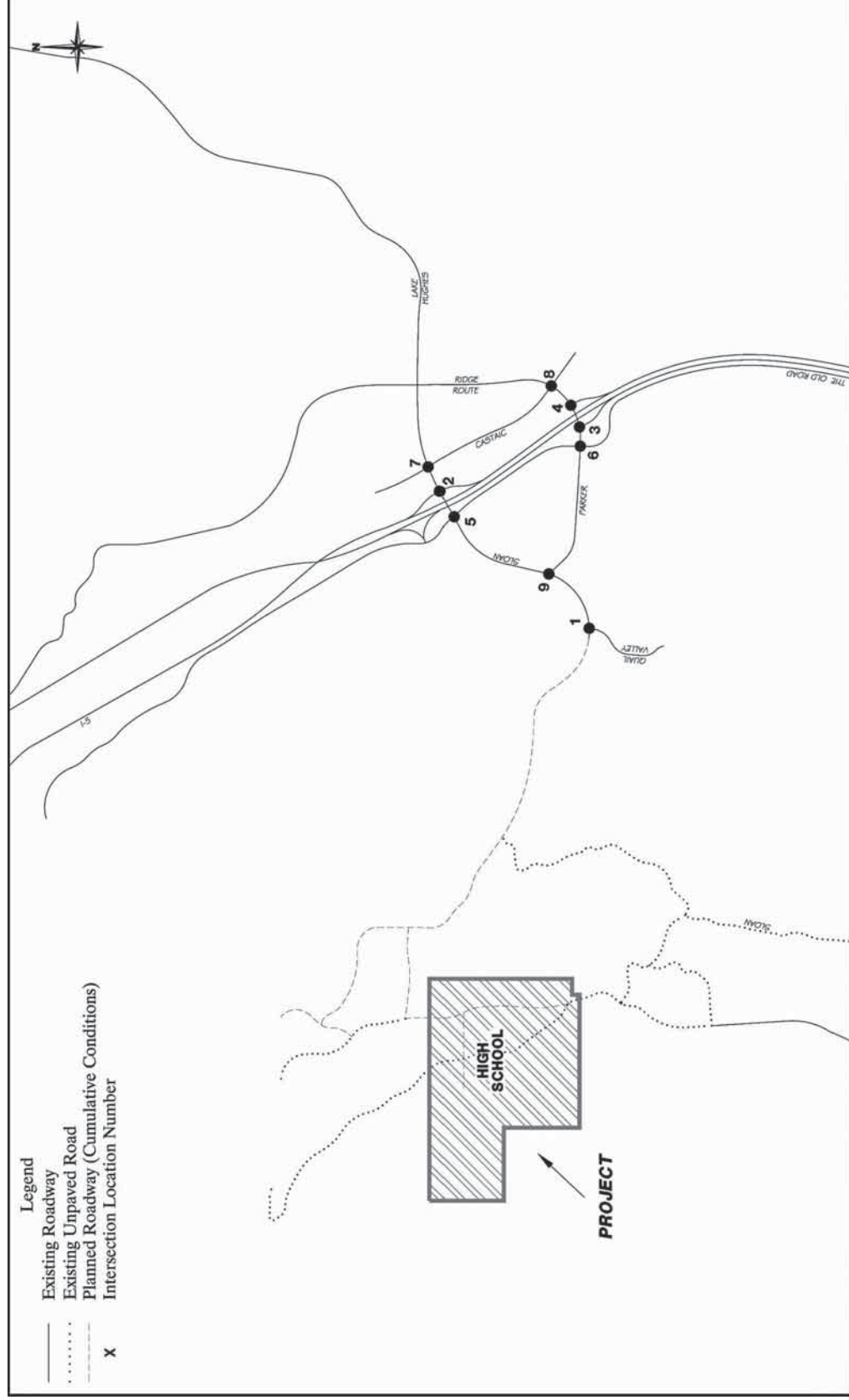


5. *Environmental Analysis*

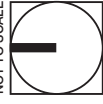
TRANSPORTATION AND TRAFFIC

This page intentionally left blank.

Intersection Location Map



NOT TO SCALE



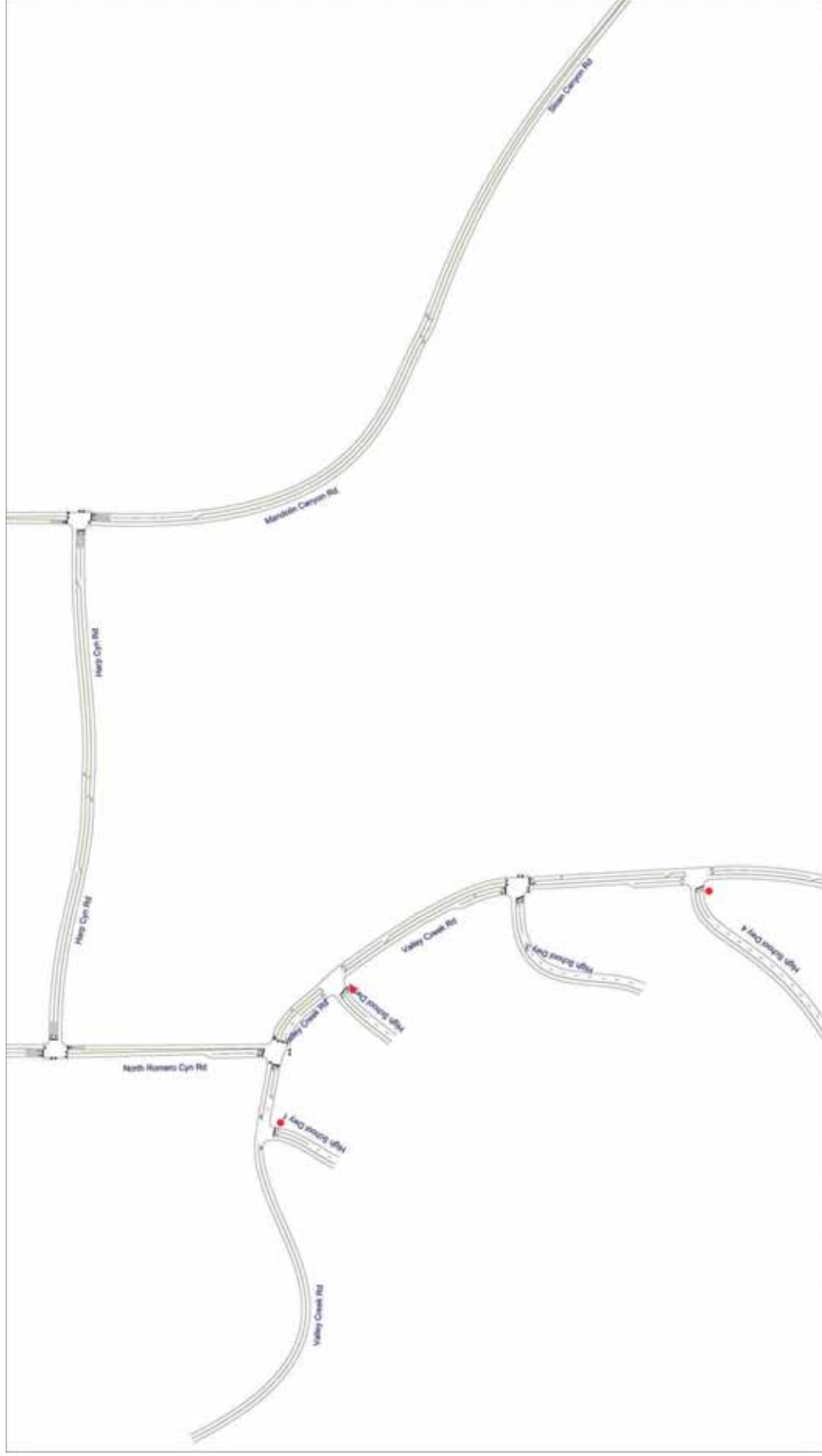
5. *Environmental Analysis*

TRANSPORTATION AND TRAFFIC

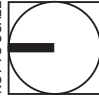
This page intentionally left blank.

5. Environmental Analysis

Conceptual Roadway and Intersection Lane Layout, Northern Route-Option A



NOT TO SCALE



Source: Austin-Foust Associates Inc 2012

Castaic High School Draft EIR

5. *Environmental Analysis*

TRANSPORTATION AND TRAFFIC

This page intentionally left blank.

Conceptual Roadway and Intersection Lane Layout, Northern Route-Option B



Castaic High School Draft EIR

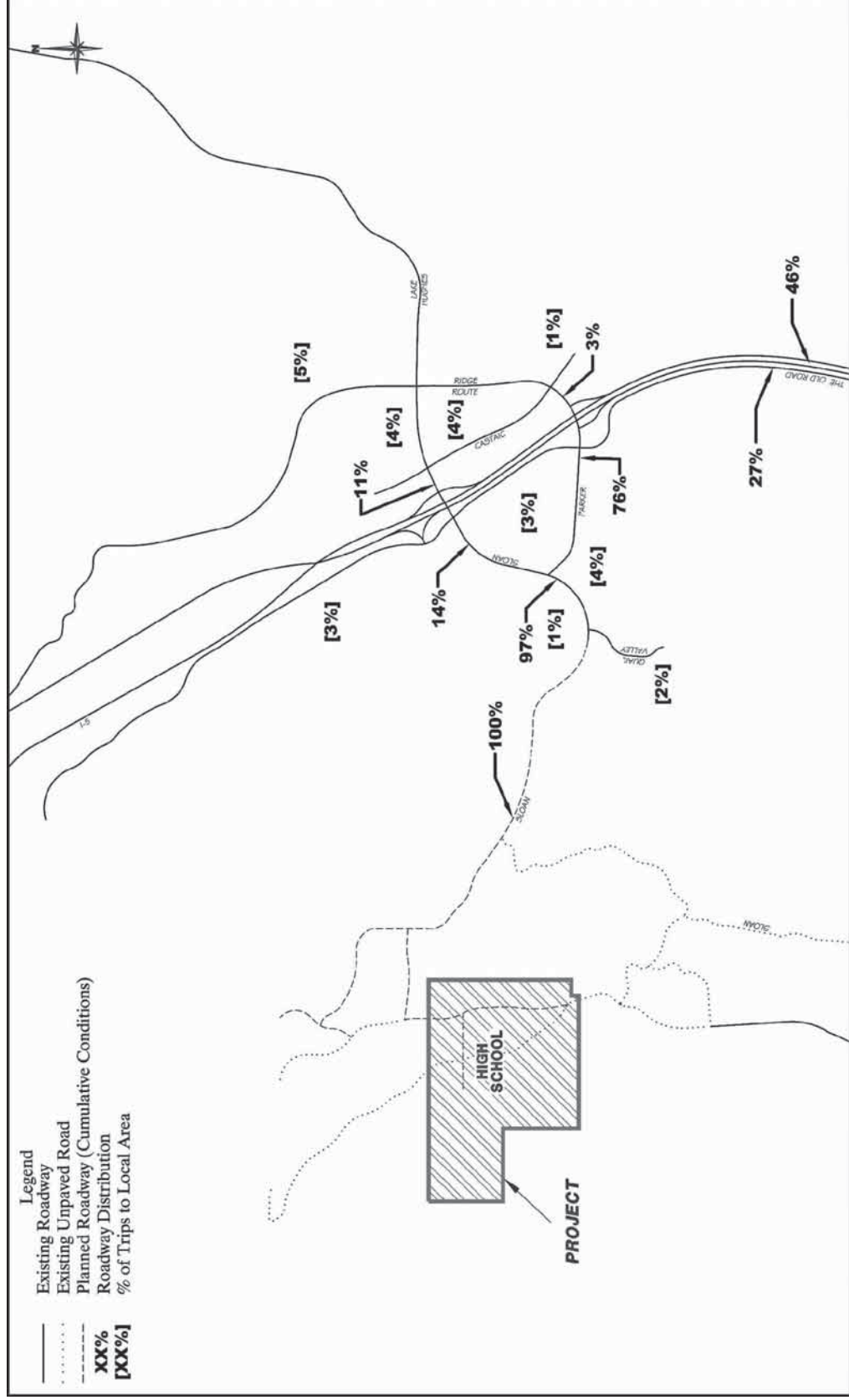
5. *Environmental Analysis*

TRANSPORTATION AND TRAFFIC

This page intentionally left blank.

5. Environmental Analysis

Forecast Project Trip Distribution, Scenario 1



Source: Austin-Foust Associates Inc 2010

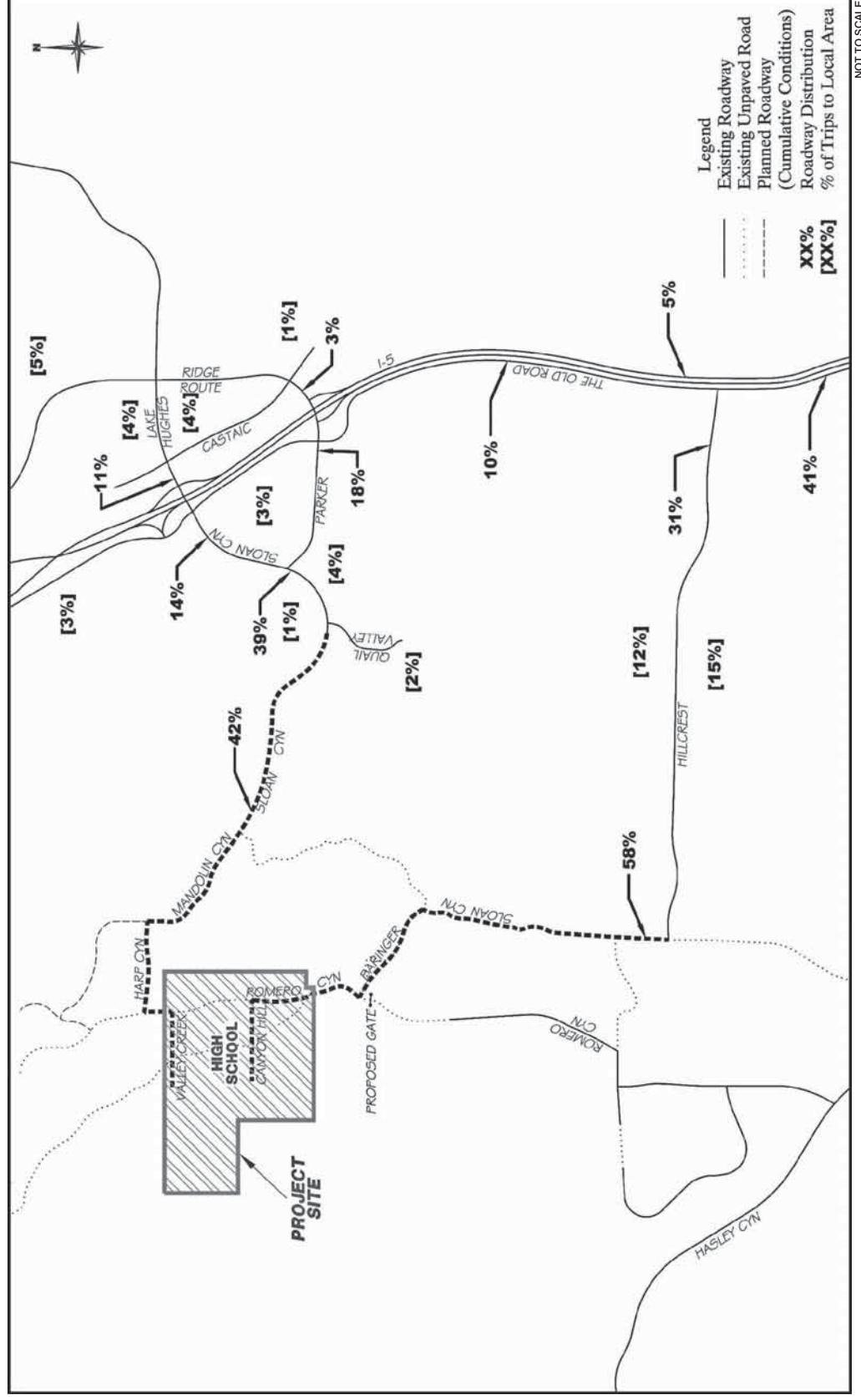
Castaic High School Draft EIR

5. *Environmental Analysis*

TRANSPORTATION AND TRAFFIC

This page intentionally left blank.

Forecast Project Trip Distribution, Scenario 2



5. *Environmental Analysis*

TRANSPORTATION AND TRAFFIC

This page intentionally left blank.

5. Environmental Analysis

5.15 UTILITIES AND SERVICE SYSTEMS

The potential for adverse impacts on utilities and service systems was evaluated based on information concerning current service levels and the ability of the service providers to accommodate the increased demand created by the proposed project.

5.15.1 Water Services

5.15.1.1 Environmental Setting

The following discussion of water supplies and water demands in the Santa Clarita Valley is based on information from the Castaic Lake Water Agency's 2010 Urban Water Management Plan (Kennedy-Jenks Consultants 2011).

Water Supplies Available to the Santa Clarita Valley

The project site is undeveloped and not currently served by any water district. The Castaic Lake Water Agency (CLWA) provides water to local purveyors in the Santa Clarita Valley. Water purveyors serving the region include the Newhall County Water District (NCWD) and Los Angeles County Waterworks District No. 36 (LACWWD 36). As listed on the NCWD website, NCWD serves a population of 44,352 people with 9,444 service connections. NCWD maintains 23 reservoirs with a water storage capacity of 25.56 million gallons. LACWWD 36 serves a population of 4,650 with 1,320 service connections. Both water districts provide water from two main sources: local groundwater and imported water purchased from the State Water Project.

The William S Hart Union High School District (District) has submitted an application to annex the project site into the NCWD, and it is expected that NCWD would be the retail water provider for the proposed project.

The 2010 Urban Water Management Plan (UWMP) contains forecasts of water supplies and water demands in the Santa Clarita Valley and covers all four retail water providers in the service area of the CLWA: NCWD, the CLWA Santa Clarita Water Division, Valencia Water Company (VWC), and LACWWD 36. Water supply forecasts for the four retail water agencies are combined, but water demand forecasts for each agency are separate. Therefore, water supply forecasts for the region presented here are for the four agencies combined, and water demand forecasts are for the NCWD.

Imported Water

CLWA buys water from the California Department of Water Resources imported from northern California via the State Water Project (SWP). CLWA also has a long-term water transfer agreement with two water storage districts in Kern County (Buena Vista Water Storage District and Rosedale-Rio Bravo Water Storage District). Newhall Land Company has acquired a water transfer from Kern County that is expected to be available to the VWC upon development of the Newhall Ranch Specific Plan.

Groundwater

Groundwater is pumped by each of the four retail water providers in the Santa Clarita Valley from the East Subbasin of the Santa Clara River Groundwater Basin. The subbasin contains two aquifers: one in alluvium and one in Saugus Formation rock underlying the alluvium.

CLWA also has a groundwater banking agreement with the Semitropic Water Storage District (Semitropic) in Kern County under which Semitropic takes part of CLWA's allocated SWP supply in wet years and stores the



5. Environmental Analysis

UTILITIES AND SERVICE SYSTEMS

water in the groundwater basin underlying Semitropic. In exchange, in dry years, Semitropic leaves its allotment of SWP water in the California Aqueduct and supplies farmers in its service area using groundwater.

Recycled Water

Recycled water is produced at two water reclamation plants (WRPs) in the Santa Clarita Valley. The Saugus WRP, approximately eight miles southeast of the project site, has a wastewater treatment capacity of 6.5 million gallons per day (mgd); in 2010 the facility produced an average of 5.02 mgd of tertiary recycled water. The Valencia WRP has a current treatment capacity of 21.6 mgd and in 2010 produced an average of 15.17 mgd of tertiary treated recycled water. A 6 mgd expansion of the Valencia WRP to a capacity of 27.6 mgd is planned, with completion expected by 2035. A third WRP in the Santa Clarita Valley, the Newhall Ranch WRP, is planned with initial operation by 2025 and with capacity expected to reach 6.8 mgd by 2045. Total capacity of the three WRPs is expected to reach 40.9 mgd by 2045.

Water Supplies Summary

Forecast water supplies available to the Santa Clarita Valley are summarized below in Table 5.15-1. The data in the table are for normal water year conditions and do not include water from water banking agreements, since those water sources are only used during dry years.

Table 5.15-1				
Forecast Existing and Planned Water Supplies				
Source		2015	2025	2035
Potable Water	Groundwater	34,600	37,600	40,600
	Imported Water • State Water Project • Water transfers from Kern County water storage districts	70,707	70,207	70,007
Recycled Water		1,300	5,550	10,600
Total		106,607	113,357	121,207
Demands with Conservation		72,343	80,236	96,892
Surplus		34,264	33,121	24,315

Note: Numbers are acre-feet per year.

Forecast Water Demands in NCWD Service Area

Total water demands with conservation in NCWD's service area are forecast to be 11,406 acre-feet per year (afy) in 2015, 13,440 afy in 2025, and 16,791 afy in 2035.

Water Mains

The roadways approximately one mile east of the project site, including Sloan Canyon Road and Quail Valley Road, contain multiple water lines, including 18-inch and 12-inch water lines along Sloan Canyon Road. There is also a water booster station at the corner of Sloan Canyon Road and Quail Valley Road.

5. Environmental Analysis

UTILITIES AND SERVICE SYSTEMS

Regulatory Setting

State

California Assembly Bill 1881

California Assembly Bill 1881 (Chapter 559, Statutes of 2006) required local governments to adopt the State Department of Water Resources' Model Water Efficient Landscape Ordinance or an equivalent. This includes requirements to reduce water use in landscaping.

Local

Water-efficient landscape requirements are contained in several sections of Title 31, *Green Building Standards Code*, of the Los Angeles County Code.

5.15.1.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project:

- U-2 Would require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- U-4 Would not have sufficient water supplies available to serve the project from existing entitlements and resources, and new and/or expanded entitlements would be needed.



5.15.1.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Notice of Preparation disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.15-1: THE PROJECT INCLUDES CONSTRUCTION OF NECESSARY NEW WATER SERVICE INFRASTRUCTURE BUT WOULD NOT SIGNIFICANTLY IMPACT WATER SERVICE OR EXISTING INFRASTRUCTURE. [THRESHOLDS U-2 (PART) AND U-4]

Impact Analysis:

Water Demand:

Water demand for the proposed project is estimated using total water use per student averaged for the six existing high schools in the Newhall County Water District, that is, 21.6 gallons per day (gpd) per student (Cole 2012). Total water use includes indoor use and outdoor use for irrigating landscaping and playfields. The average is for the entire year, not just when schools are in session. The proposed high school is thus estimated to use 56,160 gallons per day. The project has been proposed to accommodate growth within the District. Students currently attending existing schools would be transferred to the new school when it opens. Therefore, some of the students that would attend the school are already in the school system and are currently using water, reducing the expected net increase in water use by the new school. Water supplies available in the Santa Clarita Valley are described above in Section 5.15-1.1.

5. Environmental Analysis

UTILITIES AND SERVICE SYSTEMS

As part of the proposed project, the William S. Hart Union High School District would submit an application to annex the project site into the service area of the NCWD, making NCWD the water purveyor for the project site. Stephen L. Cole, the General Manager of NCWD, indicated that NCWD would be capable of providing water to the site, and that no new or expanded entitlements for water would be required. Mr. Cole further indicated that the water consumption of the proposed school would not require infrastructure improvements or new facilities beyond the proposed utility extension and new pump station described in this document. These offsite improvements are considered part of the proposed project, and any impacts associated with this proposed utility extension and new pump station are evaluated and analyzed throughout this EIR. No other construction projects would be triggered by the proposed project.

The proposed project would not require any new or expanded water supplies.

Water Mains, Water Tanks, and Pump Stations

The proposed project includes extension of utility lines, including water service lines, to the project site. These utility lines would be built in the proposed roadway that would connect Romero Canyon Road to Sloan Canyon Road to the east. The proposed water line would connect to an existing line in Sloan Canyon Road. The proposed utility extension lines would be installed during construction of the road. A pump station for the proposed extension line would be installed along the proposed new roadway. The pump station would occupy a new 50-foot by 75-foot block wall structure with pumps, electrical equipment, stand-by generator, and appurtenances. It would pump water from the pipeline extension in Sloan Canyon Road to the proposed new tanks on the property. The project also includes improvements to the existing pump station at the intersection of Quail Valley Rd and Sloan Canyon Road, including installation of a third pump at the site and electrical and piping improvements. These pump stations would convey water through the proposed extended line to the proposed water tank on the project site. The water tank would have a 750,000-gallon capacity and be located on a pad above the southwest corner of the school site. The pad would have sufficient area for a second 750,000-gallon tank to serve nearby planned residential developments; construction and operation of the second tank is not part of the proposed project. Except for the second water tank, these improvements are part of the proposed project, and the associated environmental effects are analyzed throughout this EIR. Installation of water mains, a water tank, and pump station would not have substantial impacts on the environment other than those impacts discussed in other sections of Chapter 5 of this EIR.

5.15.1.4 Cumulative Impacts

Cumulative projects include 15 residential projects and an elementary school. Should several projects be constructed that encourage population growth in a region, a cumulative impact to service providers may occur. However, the proposed project would not draw new population to the project area. The project does not include the construction of any new housing, and implementation of the proposed project would not substantially change the population of the area. Cumulative impacts related to water service could occur if new development would require the use of the same existing facilities as the proposed project, increasing the strain on existing facilities. Additionally, the proposed project would extend infrastructure to the project site, including a roadway and utility connections. These infrastructure extensions would lower barriers for future development projects. However, all new projects to be implemented in the area would be required to complete environmental analysis per CEQA and to disclose and analyze any potentially significant impacts on water services. In consideration of the preceding factors, the project's contribution to cumulative cultural resource impacts would be rendered less than significant, and therefore project impacts would not be cumulatively considerable.

5. Environmental Analysis

UTILITIES AND SERVICE SYSTEMS

5.15.1.5 Existing Regulations

- California Assembly Bill 1881

5.15.1.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval the water service impacts would be less than significant.

5.15.1.7 Mitigation Measures

No mitigation measures are required.

5.15.1.8 Level of Significance After Mitigation

Water service impacts would be less than significant.

5.15.2 Wastewater and Drainage Facilities

5.15.2.1 Environmental Setting

Wastewater Conveyance

The project site is undeveloped and has no wastewater or drainage facilities or connections.

Sewer lines in the region are operated and maintained by the Los Angeles County Sewer Maintenance District (SMD). As listed on their website, SMD serves more than half a million parcels and a population of approximately 2.3 million people in the unincorporated areas of the county, 38 cities, and 2 contract cities. The SMD system includes over 4,600 miles of sanitary sewers. The nearest sewer lines are 8-inch clay sewer lines in Sloan Canyon Road and Quail Valley Road, as listed on consolidated SMD maps. Portions of the existing sewers in Sloan Canyon Road between the Old Road and Castaic Road and in Castaic Road are 10 inches in diameter.

The Sanitation Districts of Los Angeles County (LACSD) operate and maintain a separate set of trunk sewers conveying wastewater from local sewers to LACSD wastewater treatment facilities. The nearest LACSD trunk sewer to the project site is at the intersection of Ridge Route Road and Neely Street, 2.1 miles east of the project site.

Wastewater Treatment

Wastewater treatment is provided to the Community of Castaic by LACSD, which consists of 23 independent special districts serving about 5.7 million people in Los Angeles County. The service area covers approximately 820 square miles and encompasses 78 cities and unincorporated territory within the county. LACSD operate approximately 1,400 miles of main trunk sewers and 11 wastewater treatment plants that convey and treat about half the wastewater in Los Angeles County.

As provided in a letter from LACSD (see Appendix B), two WRPs provide wastewater treatment in the Santa Clarita Valley: the Saugus WRP, approximately eight miles southeast of the project site, and the Valencia WRP, approximately five miles southeast of the project site. These facilities form a regional treatment system



5. Environmental Analysis

UTILITIES AND SERVICE SYSTEMS

known as the Santa Clarita Valley Joint Sewerage System, which has a design capacity of 28.1 mgd and, in 2010, had an average daily flow of 20.4 mgd (LACSD 2010).

Storm Drainage Systems

The project site is currently undeveloped and does not contain any storm drain systems. Storm drain systems in the region are within the purview of the Los Angeles County Department of Public Works.

Regulatory Setting

Regional and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

California Water Code

The project site is within the jurisdiction of the Los Angeles Regional Water Quality Control Board (RWQCB). In the State of California, the State Water Resources Control Board (SWRCB) and local RWQCBs have assumed the responsibility of implementing the EPA's National Pollutant Discharge Elimination System (NPDES) Program and other programs under the Clean Water Act, such as the Impaired Waters Program and the Antidegradation Policy. The primary quality control law in California is the Porter-Cologne Water Quality Act (Water Code Sections 13000 et seq.). Under Porter-Cologne, the SWRCB issues joint federal NPDES stormwater permits and state waste discharge requirements to operators of municipal separate storm sewer systems (MS4s), industrial facilities, and construction sites to obtain coverage for the stormwater discharges from these operations.

Los Angeles County Code

Los Angeles County Code Section 12.80 includes requirements intended to protect receiving waters in Los Angeles County from pollutants carried by stormwater and nonstormwater discharges.

5.15.2.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project:

U-1	Would exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.
U-2	Would require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
U-3	Would require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
U-5	Would result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

5. Environmental Analysis

UTILITIES AND SERVICE SYSTEMS

5.15.2.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Notice of Preparation disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.15-2: PROJECT-GENERATED WASTEWATER COULD BE ADEQUATELY TREATED BY EXISTING AND PROPOSED INFRASTRUCTURE. [THRESHOLDS U-1, U-2 (PART), AND U-5]

Impact Analysis:

Wastewater Generation

The proposed project operating at full capacity is estimated to generate about 31,200 gallons of wastewater per day, based on the wastewater generation rate for high schools of 12 gallons per day (City of Los Angeles 2006). Some of the students who would attend the proposed high school would transfer from existing high schools to relieve overcrowding; thus, the net increase in wastewater generation in the region would be less than 31,200 gallons per day. Regarding sewer main capacity, wastewater generation by the proposed school is estimated as 0.151 cubic feet per second (cfs). The project site is outside the service area of the Santa Clarita Valley Sanitation District (SCVSD), part of LACSD. The proposed project includes an application to the SCVSD to annex the project site. LACSD would coordinate with the District to treat wastewater generated at the project site. There is adequate wastewater treatment capacity in the region for estimated wastewater generation by the proposed project, and the project would not require the building of new or expanded wastewater treatment facilities.

Wastewater generated by the proposed school would be typical of high school uses and would not contain substantial levels of pollutants or hazardous substances. The proposed project would not exceed the wastewater treatment requirements of the Los Angeles RWQCB.

Sewer Mains

The proposed project site is currently undeveloped and does not have wastewater services. Development of the proposed project would include the installation of new sewer lines that would connect to existing sewer systems. The project, in combination with development of nearby planned projects, would also require upgrades to some existing sewers between the end of the existing sewer main at Sloan Canyon Road and Quail Valley Road to the LACSD trunk sewer at Ridge Route Road and Neely Street. Proposed new sewers are described in Table 5.15-2, and proposed sewer upgrades are described in Table 5.15-3. Locations and diameters of proposed new sewers are shown on Figure 4-9, *New Sewer Plan*, and locations of proposed upgraded sewers are shown on Figure 4-10, *Upgraded Sewer Plan*. All new sewers would be built in existing or proposed roadways; all upgraded sewers would be installed in existing roadways. Environmental impacts that would result from this action are analyzed throughout this EIR.



5. Environmental Analysis

UTILITIES AND SERVICE SYSTEMS

**Table 5.15-2
Proposed New Sewers**

Roadway	Segment	Proposed New Sewer Diameter
Valley Creek Road	North site boundary to intersection Valley Creek Road and Canyon Hill Road	8 inches
Canyon Hill Road	Valley Creek Road to Sloan Canyon Road	8 inches
Sloan Canyon Road	Canyon Hill Road to about 0.25 mile west of Quail Valley Road	8 inches
Sloan Canyon Road	About 0.25 mile west of Quail Valley Road to Quail Valley Road	10 inches

Source: Sikand 2012

**Table 5.15-3
Proposed Upgraded Sewers**

Roadway	Segment Location	Facility No.	Length (feet)	Sewer Diameter, Inches	
				Existing	Proposed Upgrade
Sloan Canyon Road	Quail Valley Road to Parker Road	PC 10569	343	8	12
Cherry Drive	Gold Hill Drive to north of Church Street	PC 9706	988	8	12
Sloan Canyon Road	The Old Road to Castaic Road		549	10	15
Castaic Road	Part of segment between Lake Hughes Road and Ridge Route Road	PC 9173	691	8	12
		9704	348	10	18
		2598-M	346	8	15
		9704	346	10	15
		2598-M	527	8	15
			271	8	12

Source: Sikand 2012

Environmental effects associated with this action are analyzed throughout this EIR.

The LACSD requires payment of a fee for connection to their treatment system. This fee is charged to all projects connecting to the system to allow for incremental improvements to the sewerage system.

IMPACT 5.15-3: PROJECT-GENERATED STORMWATER WOULD BE ADEQUATELY HANDLED BY THE PROPOSED DRAINAGE AND TREATMENT SYSTEM ONSITE. [THRESHOLD U-3]

Impact Analysis:

Proposed Onsite Drainage

The proposed project includes an onsite stormwater drainage system. Stormwater on the campus would be drained into three area drains: one in the northeast part of the building area, one in the southeast part of the building area; and one between the junior varsity baseball field and one of the soccer fields west of the building area (see Figure 5.8-4, *Proposed School Site Drainage Plan*). Underground storm drains would connect the northern and western area drains to the southeastern area drain and onward to a detention and retention basin in the southeast part of the site.

5. Environmental Analysis

UTILITIES AND SERVICE SYSTEMS

Drainage Flow Rates and Volumes at Project Completion

Development of the school would add about 46 acres of impervious surfaces to the site and would thus increase runoff rates and volumes onsite. Runoff rates and volumes in existing and postproject conditions are compared in Table 5.13-4. The burned condition is runoff from a storm after a fire when runoff rates are increased by reduced amount of vegetation holding soil in place, and runoff volume is increased due to of soil and debris included in runoff. The clear condition is runoff from a storm many years after the last fire, after vegetation has recovered and therefore runoff rates and runoff volumes are not affected by a recent fire.

Table 5.13-4						
Drainage Flow Rates and Volumes: Existing and Postproject Conditions						
Condition	Runoff Rates, cubic feet per second			Volume, acre-feet		
	Existing	Project Completion	Net increase	Existing	Project Completion	Net increase
50-year Burned	474.0	536.4	62.4	56.6	66.63	10.03
50-year Clear	441.6	515.6	74	43.11	57.97	14.86

Source: Sikand 2012. For entire drainage area

Detention and Retention Areas and Basins

The project would include detention and retention areas to limit postproject drainage flows and volumes to their existing values, in compliance with Los Angeles County requirements. Detention is temporary containment of stormwater followed by controlled release of water into a downstream drainage facility or stream. Retention involves removal of stormwater from a basin by evaporation, infiltration into the soil, or pumps, and does not involve discharge to a downstream drainage facility.

The total volume needed for the detention and retention areas is the net increase in drainage volume in the 50-year clear condition, that is, 14.86 acre-feet. The net increase in flow rate that must be detained by proposed drainage facilities so that post-project drainage flow rates would be no greater than existing rates is 74 cfs, that occurring in the 50-year clear condition. The total volume of the drainage area in postproject conditions would increase to 444 acres, about 1.5 percent larger than the 437 acres in existing conditions.

Proposed detention and retention facilities are listed in Table 5.13-5; the locations of the facilities are shown on Figure 4-8.

Table 5.13-5				
Proposed Detention and Retention Areas				
Designation and Type of Facility	Location Onsite	Area, acres	Depth	Volume, acre-feet
A1 Evaporation Basin	South part of site	4.59	10 inches	3.825
A2 Evaporation Basin	Southeast part of site	8.19	10 inches	6.825
B1 Retention Basin	North part of site	0.51	5 feet	2.55
B2 Retention Basin	Southeast part of site	0.58	5 feet	2.9
C1 Evaporation Basin	Northwest part of site	2.66	10 inches	2.22
C2 Evaporation Basin	West part of site	1.31	10 inches	1.09
Total	Not applicable	17.84	Not applicable	19.41

Source: Sikand 2012.

5. Environmental Analysis

UTILITIES AND SERVICE SYSTEMS

The six retention basins and evaporation basins together would limit postproject drainage flow rates and volumes to no more than existing conditions. Retention Basin B2 would be excavated within Evaporation Basin A2.

Retention Basin B2 would have an overflow pipe discharging southward into an engineered swale along the west side of Valley Creek Road that in turn would discharge into Romero Canyon. None of the other retention or evaporation basins would have overflow pipes discharging to downstream drainages.

Drainage from Engineered Slopes in Northeast Part of Site

A swale outlet would convey drainage from engineered slopes along the northeast site boundary eastward along the north side of Canyon Hill Road to a proposed arch culvert about 600 feet east of Valley Creek Road. The south end of the culvert would discharge into the natural drainage in Sloan Canyon (see Figure 5.8-3, *Proposed Drainage Plan for Slopes Next to Northeast Campus Boundary*).

Proposed Drainage Facilities for Conveying Drainage from Upstream of Project Site around School Site

Drainage from Romero Canyon and East Canyon upstream of the school site would be directed into a proposed swale and drainage channel along the north and east sides of Valley Creek Road—that is, the sides opposite the campus.

The proposed drainage channel and swale would discharge into a proposed reinforced concrete box (RCB) culvert about 360 feet south of the intersection of Valley Creek Road and Driveway 4, shown on Figure 5.8-5. The culvert would have a six-foot-square cross-section and would be about 440 feet long, and would pass under Valley Creek Road and discharge into an engineered swale just west of Valley Creek Road. To reduce the stormwater discharge rate into the swale, a grouted rip-rap energy dissipator would be installed at the outlet of the culvert. The swale would continue southward till it would discharge into the existing Romero Canyon natural drainage at the school site boundary. The natural watercourse of East Canyon would be retained in a 370-foot-long engineered swale at the south site boundary.

Valley Creek Road Crossing over East Canyon

Valley Creek Road would bridge East Canyon natural drainage channel about 300 feet north of the south site boundary. Three options are proposed for conveying the East Canyon drainage under Valley Creek Road: 1), a bridge about 25 feet long; 2), a concrete arch culvert; or 3), an RCP culvert. Two examples of concrete arch culverts are shown in Figure 5.8-4, *Concrete Arch Culvert*. Immediately south of the end of the engineered swale, Valley Creek Road would bridge over a channel connecting the swale to Romero Canyon; the bridge would be about 15 feet long. Proposed drainage improvements near Valley Creek Road in the southeast part of the project site are shown in Figure 5.8-5, *Proposed Drainage Improvements, Southeast Part of the Project Site*.

Valley Creek Road would be rerouted about 25 feet west of the current alignment of Romero Canyon Road, starting about 200 feet south of the site boundary and extending south to the intersection with Baringer Road. Roadway protection to reduce erosion along the east side of Valley Creek Road would be installed underground for a length of approximately 600 feet starting 500 feet south of the site boundary and extending north. Four optional designs are being considered for roadway protection: concrete; shotcrete (concrete sprayed through a hose); welded wire and rock revetment; or soil cement (natural soil mixed with a small amount of Portland cement and water). The four options for road protection are shown in Figure 5.8-6.

5. Environmental Analysis

UTILITIES AND SERVICE SYSTEMS

Baringer Road Crossing over Romero Canyon

Baringer Road would intersect with Valley Creek Road at a 90-degree knuckle intersection. Two options are proposed for this intersection. Option 1 would locate the intersection about 400 feet south of the south site boundary. Baringer Road would bridge the Romero Canyon natural drainage; the bridge would be about 105 feet long.

In Option 2 the west end of Baringer Road would be shifted south about 95 feet. Baringer Road would cross Romero Canyon with a 50-foot-long bridge or a concrete arch culvert. Options 1 and 2 are shown in Figures 5.8-7 and 5.8-8, respectively.

Summary

The project provides for drainage facilities for the proposed school site, for engineered slopes next to the school site, and for conveying drainage from upstream of the site around the school site. Discharges of stormwater from the project site and from upstream of the site to Romero Canyon downstream of the site would be limited to rates and volumes no greater than those of existing conditions. The drainage facilities would be adequate for stormwater from a 50-year storm, and no substantial flood risk would result.

5.15.2.4 Cumulative Impacts

Related projects consist of 15 residential projects and an elementary school.

Wastewater Treatment and Wastewater Conveyance

Should several projects be constructed that encourage population growth in a region, a cumulative impact to service providers may occur. However, the proposed project would not draw new population to the project area. Cumulative impacts related to wastewater treatment service could occur if new development would require the use of the same existing facilities as the proposed project, increasing the strain on existing facilities. Additionally, the proposed project would extend infrastructure to the project site, including a roadway and utility connections. These infrastructure extensions would lower barriers for future development projects. However, all new projects proposed in the area would be required by CEQA to complete an environmental analysis. Impacts associated with future projects would be disclosed, analyzed, and mitigated as necessary at that time.

Storm Drainage

Other projects in the Upper Santa Clarita Watershed would add impermeable surfaces and thus would increase rates and volumes of runoff. Each related project would be mandated to meet Los Angeles County requirements limiting postdevelopment runoff rates and volumes from a 50-year storm to no greater than existing rates and volumes. Therefore, no significant cumulative impacts would occur as a result of the proposed project.

5.15.2.5 Existing Regulations

- California Water Code Sections 13000 et seq.
- Los Angeles County Code Section 12.80



5. Environmental Analysis

UTILITIES AND SERVICE SYSTEMS

5.15.2.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements, the following impacts would be less than significant: 5.15-2 and 5.15-3.

5.15.2.7 Mitigation Measures

No mitigation measures are required.

5.15.2.8 Level of Significance After Mitigation

Wastewater and storm drainage impacts would be less than significant.

5.15.3 Solid Waste Services

5.15.3.1 Environmental Setting

The area is served by landfills operated by the Sanitation Districts of Los Angeles County. LACSD operate three sanitary landfills, four landfill energy recovery facilities, two recycle centers, and three materials recovery/transfer facilities, and participate in the operation of two refuse-to-energy facilities.

The project site is within an area defined by the Los Angeles County Solid Waste Information Management System as the Castaic Wasteshed. Solid waste from the area is distributed to a number of areas. As listed in the County of Los Angeles Department of Public Works' "Detailed Solid Waste Disposal Activity Report by Jurisdiction of Origin" for the period between March 2010 and March 2011, solid waste from Castaic was disposed of at the Antelope Valley Public Landfill #2, Azusa Land Reclamation, Chiquita Canyon Landfill, Lancaster Landfill, Puente Hills Landfill, and Sunshine Canyon City/County Landfill.

Of the aforementioned landfills, the two nearest facilities are the Chiquita Canyon Landfill in Castaic and the Sunshine Canyon Landfill in the Community of Sylmar in the City of Los Angeles. The Chiquita Canyon Landfill is north of State Route 126, about 3 miles west of the I-5 and about 3.8 miles south of the project site, and is operated by Waste Connections. The Sunshine Canyon Landfill is near the southwest side of the I-5 / SR-14 junction, about 13.5 miles southeast of the project site, and is operated by Republic Services. Operating information about the two landfills is in Table 5.15-6.

Table 5.15-6
Chiquita Canyon and Sunshine Canyon Landfills

<i>Landfill</i>	<i>Location</i>	<i>Maximum Permitted Disposal, Tons per Day</i>	<i>Actual Disposal Rate, tons per day</i>	<i>Remaining Capacity, Cubic Yards</i>	<i>Estimated Closing Date</i>
Chiquita Canyon	29201 Henry Mayo Drive (State Route 126), Castaic	6,000		63,900,000 (34,100,000 tons)	2019
Sunshine Canyon	14747 San Fernando Road, Sylmar	12,100	7,456 ¹	112,300,000 (59,900,000 tons)	2037

Source: CalRecycle 2012a, 2012b.

¹ Source: Sunshine Canyon Landfill. December 2011 Monthly Report. http://www.sunshinecanyonlandfill.com/home/pdf/LEA/MonthlyLEA_for_December_2011.pdf. Rate is total disposal for December 2011 averaged over 27 days that month the landfill operated.

5. Environmental Analysis

UTILITIES AND SERVICE SYSTEMS

Waste hauling from sites in Castaic is not provided by the community or by the county. Independent contractors provide waste hauling services to properties in the area.

Regulatory Setting

State and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

State

Assembly Bill 939

Assembly Bill (AB) 939 (Chapter 1095, Statutes of 1989), the Integrated Waste Management Act, requires every California city and county to divert 50 percent of its waste from landfills by the year 2000. In addition, AB 939 requires each county and incorporated city to prepare a Source Reduction and Recycling Element for its jurisdiction, identifying waste characterization; source reduction; recycling; composting; solid waste facility capacity; education and public information; funding; special waste (asbestos, sewage sludge, etc.); and household hazardous waste in addition to a countywide siting element specifying areas for transformation or disposal sites to provide capacity for solid waste generated in the jurisdiction that cannot be reduced or recycled for a 15-year period.

Local

Los Angeles County Code

Los Angeles County Code Section 20.87, Construction and Demolition Debris Recycling and Reuse, contains requirements intended to increase the recycling and reuse of construction and demolition (C&D) debris. It includes the following requirements:

- A. At least 50 percent, determined by weight, of all soil, rock, and gravel removed from a project site must be recycled or reused unless a lower percentage is approved by the director upon a determination that recycling or reuse of 50 percent of all such materials is not reasonably feasible. To the extent practicable, soil, rock, and gravel to be removed from the project site may not be commingled with other project C&D debris.
- B. At least 50 percent, determined by weight, of all project C&D debris, exclusive of soil, rock, and gravel, must be recycled or reused unless a lower percentage is approved by the director upon a determination that recycling or reuse of 50 percent of all such materials is not reasonably feasible.
- C. Inert materials, exclusive of soil, rock, and gravel, may comprise no more than two-thirds, determined by weight, of the percentage of project C&D debris that is required to be recycled or reused under subsection B, unless a higher percentage of inert materials is approved by the director upon a determination that the project will not otherwise generate or result in sufficient C&D debris to meet the level of recycling or reuse required in subsection B.
- D. In the event the required percentages of C&D debris have not been recycled or reused, every ton or fraction of a ton of C&D debris that has not been recycled or reused as required constitutes a separate violation of this chapter for which the director may impose administrative penalties as provided by subsection G of Section 20.87.090.



5. Environmental Analysis

UTILITIES AND SERVICE SYSTEMS

- E. Nothing in this section is intended to prohibit or discourage recycling or reuse of more than the required percentage of any project C&D debris. (Ord. 2005-0004 § 1 (part), 2005)

5.15.3.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project:

- U-6 Would be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.
- U-7 Would not comply with federal, state, and local statutes and regulations related to solid waste.

5.15.3.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Notice of Preparation disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

IMPACT 5.15-4: EXISTING AND PROPOSED FACILITIES WOULD BE ABLE TO ACCOMMODATE PROJECT-GENERATED SOLID WASTE AND COMPLY WITH RELATED SOLID WASTE REGULATIONS. [THRESHOLDS U-6 AND U-7]

Impact Analysis:

Solid Waste Generation

Operation of the proposed project would generate solid waste at the site. Schools are estimated to generate approximately 0.6 pound of solid waste per day (CalRecycle 2009). It is assumed that faculty and staff would generate similar amounts of waste at the school. With a capacity of 2,600 students and 175 staff members, the proposed school would generate approximately 1,560 pounds of solid waste per school day. This rate of waste generation would not significantly increase the amount of regional waste generated and disposed of or otherwise overwhelm or significantly impact solid waste facilities. The Chiquita Canyon and Sunshine Canyon Landfills have combined permitted rates of 18,100 tons per day. The proposed project would not require new or expanded solid waste facilities.

The project would not demolish any existing structures and would therefore not generate demolition debris. Solid waste generated by construction of the project would be relatively small and would not recur.

The proposed school is intended to serve the existing population as well as future residents from planned growth in the region, and would not result in a substantial increase in area population. Many of the students that would attend the proposed school are currently enrolled at other high schools in the region, including West Ranch High School and Valencia High School, and are currently generating solid waste there.

Regulations Governing Solid Waste Disposal

During construction and operation of the proposed project, the District would comply with all city, county, and state solid waste diversion, reduction, and recycling mandates, including compliance with the Countywide Integrated Waste Management Plan. The District would cooperate, to the extent feasible, with the city's effort to achieve the goals of Assembly Bill 939 (AB 939), the Integrated Waste Management Act of

5. Environmental Analysis

UTILITIES AND SERVICE SYSTEMS

1989, which requires source reduction, reuse, recycling, and composting programs to reduce tonnage of solid waste going to landfills by 50 percent. The District would make every reasonable effort to reuse and/or recycle the construction debris that would otherwise be taken to a landfill and would also dispose of hazardous wastes, including paint used during construction, only at facilities permitted to receive them, and in accordance with local, state, and federal regulations. As required by Los Angeles County Code Section 20.87, the project would recycle or reuse at least half of construction debris removed from the site, if feasible. The proposed project would comply with all applicable federal, state, and local statutes and regulations related to solid waste disposal.

AB 32 (Chapter 488, Statutes of 2006), the "California Global Warming Solutions Act," established mandatory recycling as one of the measures to reduce GHG emissions adopted in the Scoping Plan by the California Air Resources Board.

AB 341 (Chapter 476, Statutes of 2011) requires that all "commercial" generators of solid waste (businesses, institutions, and multifamily dwellings) establish recycling and/or composting programs. AB 341 goes beyond AB 939 and establishes the new recycling goal of 75 percent by 2020.

The project would haul at least 75 percent of the nonhazardous construction debris and operational waste to a recycling facility. The project would have no adverse impact on the county's ability to comply with the existing regulations. The District would arrange for an existing independent contractor such as Waste Management Blue Barrel Disposal to remove waste from the project site. Neither construction nor operation of the proposed project would generate enough solid waste to overwhelm or otherwise significantly impact landfills or other solid waste systems and facilities in the area. The project would comply with all federal, state, and local statutes and regulations related to solid waste. No significant impacts related to solid waste would occur as a result of the proposed project.



5.15.3.4 Cumulative Impacts

Related projects consist of 15 residential projects and an elementary school. Should several projects be constructed that encourage population growth in the region, a cumulative impact to service providers may occur. However, the proposed project would not draw new population to the project area. The proposed school would serve an existing population. Cumulative impacts related to solid waste service could occur if new development would require the use of the same existing facilities as the proposed project, increasing the strain on existing facilities. Additionally, the proposed project would extend infrastructure to the project site, including a roadway and utility connections. These infrastructure extensions would lower barriers for future development projects. However, all new projects to be implemented in the area would be required to complete environmental analysis per CEQA and to disclose and analyze any potentially significant impacts on solid waste services. No significant cumulative impacts related to solid waste would occur as a result of the proposed project.

5.15.3.5 Existing Regulations

- California Assembly Bill 939
- Los Angeles County Code Section 20.87

5.15.3.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements, the following impacts would be less than significant: 5.15-4.

5. Environmental Analysis

UTILITIES AND SERVICE SYSTEMS

5.15.3.7 Mitigation Measures

No mitigation measures are required.

5.15.3.8 Level of Significance After Mitigation

Solid waste impacts would be less than significant.

5.15.4 Dry Utilities

5.15.4.1 Environmental Setting

Utilities would be provided to the proposed facilities by the following service providers, among others:

- Electricity: Southern California Edison
- Natural Gas: Southern California Gas Company
- Telephone and Internet Service: Verizon Communications

Southern California Edison (SCE) provides electricity services to 180 cities over 50,000 square miles of service area, providing power to over 13 million people, 5,000 large businesses, and 280,000 small businesses. Their operation includes 16 utility interconnections, 4,990 transmission and distribution circuits, and 425 transmission and distribution crews. Total consumption of electricity provided by SCE is forecast as 99,875 gigawatt-hours (GWH) in 2010, increasing to 110,362 GWH in 2018 (CEC 2009).

The Southern California Gas Company (SCGC) provides natural gas services to 20.9 million consumers through 5.8 million meters in more than 500 communities. The company's service territory encompasses approximately 20,000 square miles throughout central and southern California. Total natural gas supplies available to the SCGC are estimated to remain stable at 3,875 million cubic feet per day through 2030 (CGEU 2010).

Verizon Communications provides telephone, internet, and cable television services more than 140 million customer connections with telephone, internet, and television services.

Regulatory Setting

No state, regional, or local laws, regulations, plans, or guidelines are of special note to the proposed project regarding dry utilities.

5.15.4.2 Environmental Analysis

IMPACT 5.15-5: EXISTING FACILITIES WOULD BE ABLE TO ACCOMMODATE PROJECT-GENERATED UTILITY DEMANDS. [NO SPECIFIC THRESHOLD]

Impact Analysis:

Project Energy Demands

Schools are estimated to use about 7.46 kilowatt-hours (kWh) of electricity per square foot per year (Itron 2006). The proposed school would contain about 250,000 square feet of building area; thus, electricity consumption by operation of the school is forecast to use about 1,865,000 kWh of electricity per year.

5. Environmental Analysis

UTILITIES AND SERVICE SYSTEMS

Natural gas use by schools is estimated at 0.16 therms per square foot per year (Itron 2006).¹ Therefore, the proposed 250,000-square-foot school is estimated to use about 40,000 therms of natural gas per year.

The proposed project would extend existing utility service to the project site from the existing development near Sloan Canyon Road and Quail Valley Road. The utility extensions would be constructed along the proposed road connecting Sloan Canyon Road to the project site, and would be installed during construction of that road. Extension of these utilities and construction of this road are considered part of the proposed project, and the environmental effects of these actions are considered throughout this EIR.

The proposed project would not increase the population of the region, and no increase in the regional demand for utility services would occur as a result of the proposed project. The proposed high school would consume relatively small amounts of electricity and gas. The electricity, gas, and telephone service providers in the area are large regional providers and are capable of providing the level of service necessary for a high school. No significant impacts related to dry utilities would occur as a result of the proposed project.

5.15.4.3 Cumulative Impacts

Should several projects be constructed that encourage population growth in a region, a cumulative impact to service providers may occur. However, the proposed project would not draw new population to the project area but would serve an existing population. Cumulative impacts related to dry utilities could occur if new development would require the use of the same existing facilities as the proposed project, increasing the strain on existing facilities. Additionally, the proposed project would extend infrastructure to the project site, including a roadway and utility connections. These infrastructure extensions would lower barriers for future development projects. However, all new projects to be implemented in the area would be required to complete environmental analysis per CEQA and to disclose and analyze any potentially significant impacts on solid waste services. No significant cumulative impacts related to solid waste would occur as a result of the proposed project.



5.15.4.4 Level of Significance Before Mitigation

The following impacts would be less than significant: 5.15-5.

5.15.4.5 Mitigation Measures

No mitigation measures are required.

5.15.4.6 Level of Significance After Mitigation

Dry utilities impacts would be less than significant.

¹ One therm corresponds to about 97 cubic feet of natural gas.

5. *Environmental Analysis*

UTILITIES AND SERVICE SYSTEMS

This page intentionally left blank.

6. ***Significant Unavoidable Adverse Impacts***

Chapter 1, *Executive Summary*, Table 1-5, summarizes the impacts, mitigation measures, and levels of significance before and after mitigation. Though mitigation measures would reduce the level of impact, the following impacts would remain significant and unavoidable after mitigation measures are applied:

- Aesthetics
- Air Quality
- Noise
- Transportation and Traffic

6.1 ***AESTHETICS***

Impact 5.1-3: The proposed project would substantially alter the existing visual character of the site and its surroundings.

Construction activities would introduce a considerable amount of heavy equipment and associated vehicles, including dozers, graders, scrapers, and trucks, into the viewshed of residents. Additionally, the mass grading needed to prepare the project site would involve moving millions of cubic yards of earth. This initial phase of construction would result in the most pronounced visual changes to the proposed project site. The presence of equipment, vehicles, personnel, and other construction-related elements on the project site would temporarily degrade prominent views from publicly accessible observation points for moderate and high sensitivity viewers. Although of short duration, this impact is considered significant. Implementation of Mitigation Measures AES-1 and AES-2 could reduce some construction-related aesthetic impacts; however, even with implementation of these measures, construction-related impacts would remain significant and unavoidable.

For long-distance views to the proposed project site, visual impacts would be potentially significant if light colors are used on the campus buildings and roofs and if small landscape trees used. This would cause the project to stand out against the backdrop of muted hillsides. Implementation of applicable minimum landscaping standards and building design considerations, as outlined in Mitigation Measures AES-3 through AES-6, would reduce this impact to less-than-significant levels for long-distance background viewers. However, there are no feasible mitigation measures to preserve the character or quality of the proposed project site in the vicinity of existing residential properties.

The visual resources on the site are most importantly hillsides and ridgelines. The County of Los Angeles element discusses the importance of protecting these resources. Impacts to two of the three designated Primary Significant Ridgelines would be significant. Implementation of Mitigation Measures AES-3 through AES-6 could reduce some aesthetic impacts; however, even with implementation impacts would remain significant and unavoidable.

Impact 5.1-4: The project would create a new source of substantial light that would adversely affect nighttime views in the area.

Although all lighting would be fully shielded, reflected light from building, pavement, and field surfaces would still significantly increase the amount of light in the area. Because of the existing dark conditions on the site and the extensive size of this proposed project and the type of intense lighting (athletic fields and parking lots), there are no feasible mitigation measures to reduce the significant light increase. Even with compliance



6. Significant Unavoidable Adverse Impacts

with the county lighting ordinance, there are no other feasible measures that would reduce the physical light impacts to less-than-significant levels. Mitigation Measures AES-7 to AES-9 would help minimize these impacts, but a significant and unavoidable impact would remain.

Cumulative

Project-related construction activities would result in significant impacts to visual character and nighttime light even after incorporation of mitigation. Therefore, the project's contribution to cumulative aesthetic impacts would be cumulatively considerable and remain a significant and unavoidable impact of the project.

6.2 AIR QUALITY

Impact 5.2-1: Construction activities would generate short-term emissions that exceed thresholds for VOC, NO_x, PM₁₀, and PM_{2.5} and would cumulatively contribute to the nonattainment designations of the SoCAB.

Air pollutant emissions of VOC, NO_x, PM₁₀, and PM_{2.5} would exceed SCAQMD regional significance thresholds. The primary source of NO_x emissions would be off-road construction equipment exhaust during onsite grading operations. Emissions of NO_x that exceed the SCAQMD's regional significance threshold would significantly contribute to the O₃ and particulate matter (PM₁₀ and PM_{2.5}) nonattainment designations of the SoCAB. The primary source of VOC would be paints used during architectural coating. The primary sources of PM₁₀ and PM_{2.5} would be off-road construction equipment and fugitive dust generated during hauling operations. Impacts from VOC, NO_x, PM₁₀, and PM_{2.5} emissions generated from construction activities would be potentially significant.

Implementation of Mitigation Measures AQ-1 through AQ-4 would reduce emissions of VOC, PM₁₀, and PM_{2.5} to below SCAQMD regional thresholds. However, NO_x emissions would continue to exceed the SCAQMD regional threshold during grading activities; therefore, Impact 5.2-1 would remain significant and unavoidable.

Impact 5.2-3: Construction of the proposed project could expose sensitive receptors to substantial pollutant concentrations of NO_x, PM₁₀, and PM_{2.5}.

LSTs are the amount of project-related emissions (lbs/day) at which localized concentrations (ppm or µg/m³) would exceed the ambient air quality standards for criteria air pollutants for which the SoCAB is designated nonattainment.

The maximum daily construction emissions would exceed the LSTs for NO_x, PM₁₀, and PM_{2.5}. Construction equipment exhaust combined with fugitive particulate matter emissions has the potential to expose sensitive receptors to substantial concentrations of NO_x, PM₁₀, and PM_{2.5}. Implementation of Mitigation Measures AQ-1 through AQ-4 would reduce NO_x and PM_{2.5} to below the LST threshold. However, even with incorporation of Mitigation Measures AQ-1 through AQ-4, PM₁₀ generated during construction would continue to exceed the ambient air quality standards and generate substantial concentrations of air pollutants at sensitive receptors. Impact 5.2-3 would remain a significant and unavoidable project level impact for localized PM₁₀ concentrations.

Cumulative

Project-related construction activities would cause PM₁₀ levels to exceed the AAQS even after incorporation of mitigation. Therefore, the project's contribution to cumulative localized air quality impacts would be cumulatively considerable and remain a significant and unavoidable impact of the project.

6. Significant Unavoidable Adverse Impacts

6.3 NOISE

Impact 5.10-1: Project-related traffic would significantly increase noise along roadways.

The proposed project would result in an increase of traffic on study area roadways that would cause significant noise impacts at noise-sensitive receptors (greater than 3 dB increase). An increase in traffic levels along the segments would substantially increase the ambient noise environment in the vicinity of noise-sensitive receptors.

For the **single-access scenario**, potentially significant noise impacts would occur at noise-sensitive receptors along the following roadway segments:

- Sloan Canyon Road from The Old Road to 1 mile west of Quail Hill Parkway
- Parker Road from Sloan Canyon Road to I-5 southbound ramps
- The Old Road from Parker Road to Hillcrest Parkway

For the **multiple-access scenario**, potentially significant noise impacts would occur at noise-sensitive receptors along the following roadway segments:

- Sloan Canyon Road from The Old Road to Hillcrest Parkway
- Parker Road from Sloan Canyon Road to The Old Road.

No feasible mitigation measures are available for the increases in traffic noise along roadway sections. Traffic noise impacts would be significant and unavoidable.



Impact 5.10-6: Construction activities would result in significant temporary noise increases.

For linear construction, such as a roadway, construction noise is assessed from the centerline of the alignment. The closest residential building is approximately 25 feet from the road, so the maximum noise level that may be heard intermittently (with the assumed equipment operating in the same place) at nearby building would be 85.9 dBA. The ambient noise levels at receptors that would be affected by roadway construction ranges from 37.2 to 56.2 dBA L_{eq} . Construction noise would subside as construction activities move farther along the roadway, however, it would result in a substantial noise increase at any sensitive receptor within 500 feet.

For construction of the access road (not for campus construction), substantial temporary noise increases would occur at residential receptors along the roadway segments. Roadway construction noise is considered a significant impact. Although implementation of Mitigation Measures N-1 and N-2 would reduce noise during construction of roadways, the noise levels would not be reduced to below significance thresholds; therefore, impacts would be significant and unavoidable.

Cumulative

Project-related construction activities would result in significant impacts to sensitive noise receptors along the roadway even after incorporation of mitigation. Therefore, the project's contribution to cumulative noise impacts would be cumulatively considerable and remain a significant and unavoidable impact of the project.

6.4 TRANSPORTATION AND TRAFFIC

Impact 5.14-1: Project-generated traffic would result in unacceptable levels of service at several existing study area intersections.

6. Significant Unavoidable Adverse Impacts

Intersection LOS would exceed capacity at several study area intersections, as shown in Table 6.1.

Table 6.1 Significant Traffic Impacts before Mitigation				
Year	School Capacity	Scenario*	Intersections Significantly Impacted	
Short Term (2014)	1,600	1	• Sloan Canyon Road at Quail Valley Road • Parker Road at Southbound I-5 Ramp • The Old Road at Parker Road • Sloan Canyon Road at Parker Road	
		2	• Sloan Canyon Road at Parker Road	
	2,600	1	• Sloan Canyon Road at Quail Valley Road • Parker Road at Southbound I-5 Ramp • Parker Road at Northbound I-5 Ramp • The Old Road at Parker Road • Sloan Canyon Road at Parker Road	
			2	• Sloan Canyon Road at Parker Road
		Buildout with Long-Range Highway Improvements	2,600	1
	2			• Sloan Canyon Road at Parker Road

*For either Option A or Option B

Implementation of Mitigation Measures T-1 through T-4 would reduce impacts to the intersections; however, significant impacts would remain, as shown in Table 6.2.

Table 6.2 Significant and Unavoidable Traffic Impacts after Mitigation				
Year	School Capacity, Students	Scenario*		Significant and Unavoidable Traffic Impacts
Short Term (2014)	1,600	2		Sloan Canyon Road at Parker Road
	2,600	1		- Parker Road at Southbound I-5 Ramp - Ridge Route at Northbound I-5 Ramp - The Old Road at Parker Road
Buildout with Long-Range Highway Improvements	2,600			The Old Road at Parker Road
*For either Option A or Option B				

Cumulative

Project-related construction activities would result in significant impacts to traffic even after incorporation of mitigation. Therefore, the project's contribution to cumulative traffic impacts would be cumulatively considerable and remain a significant and unavoidable impact of the project.

7. *Alternatives to the Proposed Project*

7.1 INTRODUCTION

Over a number of years the School District has conducted an exhaustive search for a high school site to serve the Castaic area. The District certified an EIR on February 6, 2005 evaluating a potential high school site within the NorthLake Specific Plan area. The site lies in an unincorporated area of Los Angeles County, north of the community of Castaic, west of Castaic Lake State Recreation Area, east of the Golden State Freeway (Interstate 5), and adjacent to a portion of the eastern boundary of the previously approved NorthLake Specific Plan area.

The EIR certified in 2005 explored eight alternative locations for the proposed high school in the Castaic area. These sites included Sterling Canyon, the Palmer site, the Sterling Industrial site, the Hasley/Del Valle site, the Lombardi site north of Hasley Canyon Road and east of Sloan Canyon Road, Romero Canyon, the Charlie Canyon/Tapia Canyon site, and the Hasley/Sloan site. Each site was evaluated for safety, location, environmental constraints, soils, topography, size and shape, accessibility, availability of public services and utilities, and cost. After presenting the sites to the Castaic Town Council, the District proceeded with a due diligence process on three sites: (1) NorthLake (“the project”), (2) Hasley/Sloan, and (3) Hasley/Del Valle. The five remaining sites were eliminated from further consideration and would involve significantly greater environmental impacts than the three sites selected for further analysis.

Development of the high school campus at NorthLake was dependent on the physical development of the NorthLake community to create access to the site. When the private development failed, the high school became infeasible and the search for a high school site began again.

On October 16, 2008 six school sites were considered, including Romero, Hasley-Sloan, Sterling Gateway, Sterling Residential, and Hasley/Del Valle and Palmer. The Board voted unanimously to move forward with the Sterling Residential property. However, it was subsequently discovered that the Sterling Residential property had restrictions that prohibited the development of a school on the property. The site selection process was reopened and November 18, 2009, the Board considered three sites, including Romero Canyon, Hasley-Sloan and Green Valley Ranch. Based on the consultant presentation and comments received from the public, the Board voted to proceed with Hasley-Sloan and Romero Canyon.

The Board engaged Padre Associates to prepare a review of the Hasley-Sloan and Romero Canyon sites and based on that review, directed staff to proceed with preparation of an EIR for the Romero Canyon site. As explained in Section 4.2, the original Romero Canyon site moved to the “hybrid site” when Parcels 2 and 3 become available for purchase. The Board approved issuance of a new NOP for the hybrid site and that site is now the subject of this EIR. This 2012 EIR is a continuation of the District’s efforts to locate and develop a high school to serve the Castaic area. The alternatives considered subsequent to the 2005 EIR are identified below.

7.1.1 Purpose and Scope

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) include a discussion of reasonable project alternatives that would “feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any significant effects of the project, and evaluate the



7. Alternatives to the Proposed Project

comparative merits of the alternatives” (CEQA Guidelines Section 15126.6). This chapter identifies potential alternatives to the proposed project and evaluates them, as required by CEQA.

Key provisions of the CEQA Guidelines on alternatives (Section 15126.6[a] through [f]) are summarized below to explain the foundation and legal requirements for the alternatives analysis in the EIR.

- “The discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly” (15126.6[b]).
- “The specific alternative of ‘no project’ shall also be evaluated along with its impact” (15126.6[e][1]).
- “The no project analysis shall discuss the existing conditions at the time the Notice of Preparation (NOP) is published, and at the time the environmental analysis is commenced, as well as what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the ‘no project’ alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives” (15126.6[e][2]).
- “The range of alternatives required in an EIR is governed by a ‘rule of reason’ that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project” (15126.6[f]).
- “Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)” (15126.6[f][1]).
- “For alternative locations, “only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR” (15126.6[f][2][A]).
- “An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative” (15126.6[f][3]).

For each development alternative, this analysis:

- Describes the alternative,
- Analyzes the impact of the alternative as compared to the proposed project,
- Identifies the impacts of the project that would be avoided or lessened by the alternative,
- Assesses whether the alternative would meet most of the basic project objectives, and
- Evaluates the comparative merits of the alternative and the project.

Per the CEQA Guidelines Section 15126.6(d), additional significant effects of the alternatives are discussed in less detail than the significant effects of the project as proposed.

7. Alternatives to the Proposed Project

7.1.2 Project Objectives

As described in Section 3.2, the following objectives have been established for the proposed project and will aid decision makers in their review of the project, the project alternatives, and associated environmental impacts:

- Provide integrated educational facilities for schoolchildren in grades 9–12 on one site;
- Relieve serious overcrowding at other District high schools serving the Santa Clarita Valley;
- Allow students within the community of Castaic to attend schools in their neighborhoods;
- Provide an additional high school to reduce reliance on the use of temporary portable classrooms in other District-operated high schools;
- Provide a new high school to serve existing and future population growth within the District's service boundaries;
- Comply with the Division of State Architect's (DSA) requirements for New School Construction related to Fire Life Safety, Structural and Access Compliance;
- Comply with the California Department of Education's (CDE) design standards and policies for new school construction in designing the needed school facilities;
- Maximize the use of state funds for site acquisition and construction of the needed school facilities.



7.1.3 Project-Related Significant and Unavoidable Impacts

Aesthetics

The project would change the existing visual character of the site and its surroundings by introducing a significantly more intense suburban-type land use in a rural area with relatively low-intensity uses. Mitigation Measures AES-1 through AES-6 would reduce this impact; however, even after mitigation, impacts to the visual character of the area would remain significant and unavoidable.

Project development would create new sources of substantial light that would adversely affect nighttime views in the area. Mitigation measures AES-7 through AES-9 would reduce this impact; however, even after mitigation, impacts to the nighttime light in the area would remain significant and unavoidable.

Air Quality

Construction activities would generate short-term emissions that exceed thresholds for VOC, NO_x, PM₁₀, and PM_{2.5} and would cumulatively contribute to the nonattainment designations in the South Coast Air Basin. Mitigation measures AQ-1 through AQ-4 would reduce this impact; however, after mitigation, this impact would remain significant and unavoidable.

Construction of the proposed project could expose sensitive receptors to substantial pollutant concentrations of NO_x, PM₁₀, and PM_{2.5}. Mitigation measures AQ-1 through AQ-4 would reduce this impact; however, after mitigation, this impact would remain significant and unavoidable.

7. Alternatives to the Proposed Project

Noise

Project-related traffic would increase noise levels along roadways. No feasible mitigation measures are available to reduce this impact, and traffic noise impacts would be significant and unavoidable.

Construction of the roadways would result in significant temporary noise impacts to residents. Mitigation measures N-1 and N-2 would reduce construction noise impacts; however, after mitigation, this impact would remain significant and unavoidable.

Transportation and Traffic

Project operations would have significant and unavoidable traffic impacts to the following intersections after implementation of Mitigation Measures T-1 through T-4:

Scenario 1:

- Parker Road at Southbound and Northbound I-5 Ramps (Short Term with 2,600 students)
- The Old Road at Parker Road (Short Term with 2,600 students)
- The Old Road at Parker Road (Long Term with 2,600 students)

Scenario 2:

- Sloan Canyon Road at Parker Road (Short Term with 1,600 students)

7.2 ALTERNATIVES CONSIDERED AND REJECTED DURING THE SCOPING AND PROJECT PLANNING PROCESS

7.2.1 Alternative Development Areas

CEQA requires that the discussion of alternatives focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project. The key question and first step in the analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR (Guidelines Sec. 15126[5][B][1]).

As mentioned previously, the 2005 EIR explored the NorthLake site and eight alternative locations for the proposed high school in the Castaic area. These sites included 1) Sterling Canyon, 2) the Palmer site, 3) the Sterling Industrial site, 4) the Hasley/Del Valle site, 5) the Lombardi site north of Hasley Canyon Road and east of Sloan Canyon Road, 6) Romero Canyon, 7) the Charlie Canyon/Tapia Canyon site, and 8) the Hasley/Sloan site. Alternatives 5 and 6, Lombardi and Romero Canyon have been combined and are now the preferred site ("project site") in this EIR.

Since 2005 the District considered 14 alternative sites (see Figure 7-1 at the end of this chapter, *Alternative Project Sites Considered and Rejected*). The District further distilled the alternative sites down to two for more detailed review and engaged Padre Associates to prepare "Castaic High School Site Selection Environmental Screening – Hasley-Sloan and Romero Canyon Site, 2010". Based on this preliminary study, the District selected the Romero Canyon site as the preferred site and engaged The Planning Center|DC&E

7. Alternatives to the Proposed Project

to prepare an EIR focused on the selected site. The NOP for the EIR for the Romero Canyon site was issued on October 12, 2011.

A recirculated NOP was issued January 12, 2012 adding a possible second site to be evaluated in the EIR. Both this original site and the second site are located within Tract 47807. After conducting due diligence research concerning the second site, the District selected the second site, also known as the “hybrid site” as the preferred site. The original site, Romero Canyon, is reviewed here as one of the alternatives.

7.3 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

Based on the criteria listed above, the following five alternatives were determined to represent a reasonable range of alternatives that have the potential to feasibly attain most of the basic objectives of the project and may avoid or substantially lessen significant effects of the project. These alternatives are analyzed in detail in the following sections.

- Alternative 1 – No Project/No Development Alternative
- Alternative 2 – No Project/Approved Development Alternative
- Alternative 3 – Reduced Intensity Alternative
- Alternative 4 – Romero Canyon Alternative Site
- Alternative 5 – Hasley-Sloan Alternative Site
- Alternative 6 – Sterling Gateway Alternative Site

An EIR must identify an “environmentally superior” alternative, and where the No Project Alternative is identified as environmentally superior, the EIR is then required to identify as environmentally superior an alternative from among the others evaluated. Each alternative's environmental impacts are compared to the proposed project and determined to be environmentally superior, neutral, or inferior. However, only those impacts found significant and unavoidable are used in making the final determination of whether an alternative is environmentally superior or inferior to the proposed project. Only the impacts involving air quality, noise, and traffic were found to be significant and unavoidable. Section 7.7 identifies the Environmentally Superior Alternative.



The proposed project is analyzed in detail in Chapter 5 of this Draft EIR.

7.4 ALTERNATIVE 1 – NO PROJECT/NO DEVELOPMENT PLAN ALTERNATIVE

Under the No Project/No Development alternative, the project is not developed and no other development occurs onsite. Conditions onsite remain as they are; that is, undeveloped land with natural terrain vegetated with chaparral, sagebrush, disturbed coast live oak woodland, and grassland. Developments have been approved on numerous nearby tracts, including single-family residential developments and one elementary school. In the No Project/No Development alternative, it is assumed that the project site would remain undeveloped while other nearby tracts was developed.

7.4.1 Aesthetics

In this alternative the site would remain in its current condition and no impacts would occur. Compared to the proposed project, this alternative would eliminate the significant unavoidable aesthetics impacts.

7. Alternatives to the Proposed Project

7.4.2 Air Quality

This alternative would eliminate criteria air pollutants generated by construction of the high school and site access roadways and operation of the high school. Therefore, this alternative would eliminate the project's significant unavoidable construction-related air quality impacts.

Operation of a new high school would generate criteria air pollutants from area sources (e.g., fuel used for heating and cooking, landscape fuels, etc.) and mobile sources. This alternative would eliminate the generation of area sources of criteria air pollutants onsite. However, under this alternative, students from the attendance area for the proposed high school would attend other existing and/or future high schools. The location of those schools would be farther from the students' homes than the proposed school site, resulting in a higher mobile source emission inventory. Therefore, operational phase emissions from this alternative would be similar to the proposed project because the District would still need to accommodate the anticipated student population generated by population growth within the District boundaries.

Compared to the proposed project, this alternative would eliminate the significant unavoidable construction-related air quality impacts.

7.4.3 Biological Impacts

Biological resources impacts would be significantly reduced in this alternative compared to the proposed project, as the project site would remain undeveloped. Nearby tracts would eventually be developed, thus, the project site would gradually decline in value for wildlife movement between nearby areas of undeveloped land.

Compared to the proposed project, this alternative would reduce biological resource impacts. However, these impacts have been mitigated to a less than significant level.

7.4.4 Cultural Resources

This alternative would not involve ground disturbance, as the site would not be cleared and graded, and a high school would not be built onsite. While this alternative would eliminate any potential impact to cultural resources, no impacts to cultural resources are anticipated under the proposed project.

7.4.5 Geology and Soils

This alternative would not place 2,600 students as well as staff and visitors onsite, and thus would not expose persons onsite to geologic hazards. Compared to the proposed project, this alternative would reduce geology and soils impacts. However, with mitigation and standard grading and construction techniques, the proposed project would not create a significant impact related to geology and soils.

7.4.6 Greenhouse Gas Emissions

This alternative would eliminate greenhouse gas (GHG) emissions generated by onsite activities including water use/wastewater generation, waste disposal, electricity use, and natural gas use. This alternative would also eliminate the temporary increase in GHG emissions generated during construction activities. However, under this alternative, students from the attendance area for the proposed high school would attend other existing and/or future high schools. The location of those schools could be farther from the students' homes than the proposed school site, resulting in a slightly higher mobile source emission inventory. With these

7. Alternatives to the Proposed Project

trade-offs in emissions, this alternative would have similar GHG emissions as compared to the proposed project.

7.4.7 Hazards and Hazardous Materials

This alternative would not involve use of hazardous materials for grading and construction on the project site. No hazardous materials would be used in this alternative for operation of the high school, such as materials for cleaning and maintenance purposes. School students and staff would not be placed on a site within a Very High Fire Hazard Severity Zone designated by the California Department of Forestry and Fire Prevention.

Compared to the proposed project, this alternative would reduce hazards and hazardous materials impacts. However, the project's impacts related to hazards and hazardous materials are not considered significant.

7.4.8 Hydrology and Water Quality

In this alternative no changes would be made to the drainage pattern on the project site, and no water pollutants would be introduced onto the site by construction or operation of the proposed school.

Compared to the proposed project, this alternative would reduce hydrology and water quality impacts. However, the project's impacts related to hydrology and water quality have been mitigated to a less than significant level.

7.4.9 Land Use and Planning

This alternative would not place land uses on the site that could conflict with the existing zoning designation onsite, A-2-2 (heavy agriculture, maximum density of two single-family dwelling units per acre), or with the existing general plan designation for the site, RL-2 (Rural Land-2, permitting single-family residences at a maximum density of one dwelling unit per two acres). For the proposed project the District is expected to exempt itself from county zoning regulations for the site; after such exemption, impacts to land use regulations for the site adopted for the purpose of avoiding or mitigating some environmental effect would be less than significant.

Compared to the proposed project, this alternative would reduce land use and planning impacts. However, the project's impacts related to land use and planning are not considered significant.

7.4.10 Noise

This alternative would not generate construction noise at the campus or along access roads. Thus, as compared to the proposed project, this alternative would eliminate the significant unavoidable construction noise impacts. Additionally, noise from stationary noise sources at a school site, such as from stadium events, band practice, and use of outdoor athletic facilities, would not occur and there would be no operational noise impacts. There would be no increase in traffic or traffic noise, as compared to existing conditions, so this alternative would eliminate the significant and unavoidable traffic noise impacts.

7.4.11 Population and Housing

This alternative would eliminate the high school, which is intended to serve the growing population of this attendance area. The lack of a high school in the area would likely discourage families from moving to this area.



7. Alternatives to the Proposed Project

The project site is undeveloped and the project would have no impact on displacement of housing or population.

7.4.12 Public Services

This alternative would not create any increases in demands for public services, as the site would remain undeveloped. However, impacts of this alternative on existing schools would be greater than those of the proposed project, as this alternative would not develop a high school to relieve existing overcrowding in District high schools and accommodate future school demand from approved projects in the Castaic area.

Compared to the proposed project, this alternative would be neutral.

7.4.13 Recreation

This alternative would not increase demand for recreational facilities and would not develop or require development of recreational facilities. The proposed project would include development of athletic facilities as part of the proposed high school. However, the proposed project would not cause increased demand for offsite recreational facilities and would not develop or require development of offsite recreational facilities. This alternative would have no adverse impact on dedication of the alignment of the adopted and planned County trail alongside Romero Canyon Road; likewise, the proposed project would have no adverse impact on dedication of alignment for that trail. This alternative would not grade and develop the existing dirt roads that are currently used by hikers, equestrians, and bicyclists.

Compared to the proposed project, this alternative would be neutral, but would eliminate the beneficial effect of the athletic facilities that would become available to the public during non-school hours.

7.4.14 Transportation and Traffic

This alternative would not generate vehicle, pedestrian, or bicycle trips; it would not generate parking demand; and no traffic impacts would occur near the site. Compared to the proposed project, this alternative would eliminate the significant unavoidable traffic impacts near the campus.

As noted previously, this alternative would require that students in the attendance travel greater distances to existing outlying high schools as the area develops. Greater travel distances would occur and traffic would increase in the neighborhoods surrounding the existing schools. There is a tradeoff between the significant impacts near the proposed campus site and at existing schools under this alternative.

7.4.15 Utilities and Service Systems

No utilities and service systems impacts would occur in this alternative, as the project site would remain undeveloped. Compared to the proposed project, this alternative would reduce utilities and service systems impacts. However, this impact is not considered significant and there is a tradeoff between the services provided at this campus and expansions that would be required at existing schools under this alternative.

7.4.16 Conclusion

This alternative would eliminate the project's significant and unavoidable impacts related to aesthetics, light/glare, construction emissions, traffic-related noise, construction-related noise and traffic conditions.

7. Alternatives to the Proposed Project

This alternative would also reduce certain impacts that were found not to be significant or mitigated to a less than significant level, including biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, population and housing, public services, recreation, and utilities and service systems.

This alternative would not achieve any of the project objectives.

- Provide integrated educational facilities for schoolchildren in grades 9–12 on one site;
- Relieve serious overcrowding at other District high schools serving the Santa Clarita Valley;
- Allow students within the community of Castaic to attend schools in their neighborhoods;
- Provide an additional high school to reduce reliance on the use of temporary portable classrooms in other District-operated high schools;
- Provide a new high school to serve existing and future population growth within the District's service boundaries;
- Comply with the Division of State Architect's (DSA) requirements for New School Construction related to Fire Life Safety, Structural and Access Compliance;
- Comply with the California Department of Education's (CDE) design standards and policies for new school construction in designing the needed school facilities;
- Maximize the use of state funds for site acquisition and construction of the needed school facilities.



7.5 ALTERNATIVE 2 – NO PROJECT/PREVIOUSLY APPROVED DEVELOPMENT

In the No Project / Previously Approved Development Alternative, the proposed high school is not developed and the site would be developed with a 79-unit development of detached single-family homes that was approved by Los Angeles County in 1992 but was not developed. This residential development was the subject of a previously adopted Mitigated Negative Declaration (MND) prepared by Bright and Associates in 1985, and various agency approvals have been obtained. A Vesting Tentative Tract No. 47807 and associated Conditional Use Permit 89-213 and Oak Tree Permit No. 89-213, and grading plan for the first phase of grading were approved in 1992 for a 79-lot residential tract. The owner also has obtained a Section 404 permit from the U.S. Army Corps of Engineers, a Section 401 Water Quality Certification from the Los Angeles Regional Water Quality Control Board, and a Section 1602 Streambed Alteration Agreement from the California Department of Fish and Game. These approvals and permits are in place, which would allow the owner to proceed with residential development once a mitigation plan is approved or impact fees are paid.

The residential uses previously approved for the site are used here for the No Project/Existing General Plan Alternative rather than estimating what might be approved for the site under current General Plan land use designation. The approved 79 dwelling units were to have been developed on about 136 acres of parcels 1, 2, and 3, and the southeastern part of parcel 4, of Tract 47807. Access to the approved residences would have been via Romero Canyon Road plus a network of internal roadways. Approximately 62 acres of parcel 4 in this alternative would be left mostly undeveloped; a possible water tank site is situated in the northwest part of parcel 4, and a planned service road would connect the possible water tank site to planned internal roadways in the central part of the project site.

7. Alternatives to the Proposed Project

The estimated number of persons per household in the Santa Clarita Valley Area Plan area in 2008 was 3.26 persons, based on population and household forecasts for that year in the Area Plan. Thus, at full occupancy, this alternative is estimated to house 258 persons. Detached single-family homes are estimated to generate 9.57 vehicle trips per day (ITE 2008); therefore, the 79 units would generate approximately 756 vehicle trips per day.

7.5.1 Aesthetics

This alternative would involve clearance and grading of a smaller area of the site, 136 acres, compared to the 158-acre onsite grading area in the proposed project. This alternative would change the visual nature of the site, as would the proposed project, but the changes would differ between the two scenarios. Buildings in this alternative would be smaller—perhaps averaging 3,000 square feet each—but would be spread across a much larger part of the site than the clustered school buildings of the proposed project. Houses in this alternative would be up to two stories high; most buildings in the proposed high school would be one story high. This alternative would not install field lighting but would install street lights and safety and security lights on houses across much of the site. The proposed project would also install safety and security lights on school buildings. Overall, aesthetics impacts of this alternative would be neutral compared to those of the proposed project.

7.5.2 Air Quality

It is assumed that the average building area of the houses to be developed in this alternative would be 3,000 square feet. Therefore the total building area of the 79 houses would be 237,000 square feet, slightly smaller than the total building area in the proposed project. This alternative would include construction of Sloan Canyon Road to the intersection of Sloan Canyon Road and Quail Valley Road, and improvements along Romero Canyon Road (a condition of development).

Construction emissions would be somewhat reduced for this alternative compared to the proposed project. Total construction emissions in this alternative would be slightly less than the proposed project because this alternative would be constructed in a shorter timeframe considering the slightly smaller total building area, and slightly smaller grading area of this alternative. However, the magnitude of criteria air pollutants generated by construction activities on a daily basis would be the same as the proposed project because a similar construction equipment fleet would be needed to prepare the site and access road. It is expected that construction emissions impacts would be significant and unavoidable for this alternative, as they would be for the proposed project.

This alternative would generate about 756 vehicle trips per day, approximately 90 percent less trips than the proposed project. Therefore, this alternative would generate substantially less long-term criteria air pollutant emissions. Operational emissions impacts from this alternative would be substantially less compared to the proposed project.

7.5.3 Biological Impacts

This alternative would involve clearing and grading a smaller part of the site than would the proposed project, and biological resources impacts would be reduced for this alternative. Biological resources impacts of the proposed project would be less than significant after implementation of mitigation.

7. Alternatives to the Proposed Project

7.5.4 Cultural Resources

In this alternative a smaller part of the project site would be cleared and graded compared to the proposed project. Thus, potential impacts to buried historic, archaeological, or paleontological resources would be reduced in this alternative than. Cultural resources impacts would be less than significant after mitigation for both this alternative and for the proposed project.

7.5.5 Geology and Soils

This alternative would involve grading and development on a smaller part of the site than would the proposed project; this alternative would also place fewer persons (258 residents) on a site where they could be exposed to geologic hazards than would the proposed project (2,600 students plus 175 staff plus visitors). Geology and soils impacts would be reduced in this alternative compared to the proposed project and would be less than significant for the proposed project.

7.5.6 Greenhouse Gas Emissions

This alternative is forecast to generate 756 vehicle trips per day, approximately 90 percent less trips than the estimated 7,384 daily trips generated by the proposed project. This alternative would also result in an increase in GHG emissions from water use/wastewater generation, waste disposal, purchased electricity, and natural gas use. However, as shown in Table 7-1, compared to the proposed project, this alternative would generate substantially less demand for utilities (40 to 50 percent less) and therefore substantially less GHG emissions. In addition, total construction emissions in this alternative would be slightly less than the proposed project because this alternative would be constructed in a shorter timeframe. Therefore, the magnitude of GHG emissions from this alternative would be substantially reduced compared the proposed project and would likely be under the draft South Coast Air Quality Management District (SCAQMD) 3,000 metric tons (MTons) bright-line threshold. Therefore, GHG emissions impacts would be reduced compared to the proposed project.



Table 7-1						
Utility Demands, No Project/Previously Approved Development Alternative						
Utility (Unit of Demand)	No Project/Previously Approved Development Alternative 79 detached single-family residential units		Proposed Project 2,600 students		Proposed Project Less No Project/Previously Approved Development Alternative Increase/(Decrease)	
	Utility Demands		Utility Demands		Total	Percent
	per Unit	Total	per Unit	Total		
Water (gallons per day)	287.5	22,713	15	39,000	(16,287)	(41.7%)
Wastewater (gallons per day)	230	18,170	12	31,200	(13,030)	(41.8%)
Solid Waste (pounds per day)	9.9	782	0.6	1,560	(778)	(50%)

Sources of Utility Demand Factors:

Water: estimated as 125 percent of wastewater generation factors from City of Los Angeles 2006.

Wastewater: City of Los Angeles 2006.

Solid Waste: California Department of Resources Recovery and Recycling (CalRecycle) 2009

Generation factors from City of Los Angeles used for wastewater because Los Angeles County Sanitation Districts does not have a generation factor for a high school.

7. Alternatives to the Proposed Project

7.5.7 Hazards and Hazardous Materials

This alternative and the proposed project would each use hazardous materials in grading and construction. Hazardous materials would also be used for cleaning and maintenance purposes during operation of each scenario.

This alternative would place fewer people on a site within a Very High Fire Hazard Severity Zone than would the proposed project. Overall, hazards and hazardous materials impacts would be slightly reduced by this alternative compared to the proposed project. Such impacts of the proposed project would be less than significant.

7.5.8 Hydrology and Water Quality

This alternative would grade—and thus change the drainage pattern on—a smaller portion of the project site than would the proposed project. Each scenario would include drainage improvements. Each scenario would introduce materials to the site that could contaminate stormwater. Overall, hydrology and water quality impacts would be slightly reduced in this alternative.

7.5.9 Land Use and Relevant Planning

The residential development in this alternative has been approved by the County of Los Angeles and would be consistent with the existing A-2-2 zoning designation for the site that allows detached single-family residences at a maximum density of two units per acre. For the proposed project the District is expected to exempt itself from county zoning regulations; after such exemption, the proposed project would not conflict with land use regulations for the site adopted for the purpose of avoiding or mitigating some environmental effect.

Because the PEA conducted for the proposed project did not find hazardous materials from the abandoned oil well in concentrations over human health screening levels, neither of these scenarios would create conflicts between future residential or school use and past oil well use. Overall, land use impacts would be slightly reduced by this alternative and would be less than significant for the proposed project.

7.5.10 Noise

This alternative would involve development of about 237,000 total square feet of building area, slightly less than the proposed project, and grading less of the site for a smaller school. This alternative would involve grading and construction of the eastern access route, but not the southern access route that is planned as part of the proposed project. Construction noise impacts would be reduced in this alternative. However, considering the proximity of sensitive receptors at residences near the southeast site boundary and near the eastern access route, construction noise impacts of this alternative are expected to be significant and unavoidable, as would such impacts of the proposed project.

This alternative would reduce project-generated traffic by almost 40 percent compared to the proposed project. Due to the relatively low volume of traffic generated by this alternative along study area roadways, traffic noise increases at sensitive receptors would be significantly reduced under this alternative. This alternative would eliminate the significant and unavoidable traffic noise impacts.

7. Alternatives to the Proposed Project

7.5.11 Population and Housing

This alternative would develop 79 detached single-family residential units on the site that would house about 258 persons at full occupancy, and the residential development in this alternative has already been approved by Los Angeles County. Therefore, this alternative would not induce growth beyond that which is already approved and planned. The proposed project also would not induce growth, as the school is proposed to relieve existing overcrowding at District high schools and to accommodate impending growth in already-approved developments in the Castaic area. This alternative and the proposed project would each involve installation of utility mains to the site. Overall, population and housing impacts of this alternative would be neutral to those of the proposed project.

7.5.12 Public Services

The proposed project would place more persons on the project site (2,600 students plus 175 staff plus visitors) than would this alternative (about 258 residents). While people would not be on the high school campus overnight, most residents in this alternative would not be at home during most of the daytime. Therefore, demands for fire, emergency medical, and police services would be somewhat reduced in this alternative compared to those of the proposed project. Demands for schools and libraries would be increased in this alternative compared to the proposed project. The California Department of Education estimates that each dwelling unit generates an average of 0.7 K–12 students (CDE 2008); thus, the 79 units in this alternative would generate an estimated 55.3 students. Likewise, this alternative would generate demands for library services that would not be generated by the proposed project. Overall, public services impacts would be neutral between the two scenarios.

7.5.13 Recreation

This alternative would introduce about 258 residents onto the project site at full occupancy and would thus create demands for new or expanded recreational facilities, and/or for increased use of existing recreational facilities. The proposed project, by contrast, would include athletic facilities and would not require students to use off-campus recreational facilities. Athletic facilities in the proposed project could be made available to area residents and organizations outside of school hours per the Civic Center Act.

Subdivision of parcels 2 and 3 in this alternative would trigger a requirement for dedication of the alignment of the adopted and planned county trail alongside Romero Canyon Road; such requirement would not be triggered by development of the school onsite.

Recreation impacts would be increased in this alternative compared to those of the proposed project; impacts of the proposed project would be less than significant. This alternative would eliminate the benefits of having access to campus athletic facilities during non-school hours.

7.5.14 Transportation and Traffic

Forecast trip generation for this alternative is 756 trips per day, or just over 10 percent of trip generation for the proposed project. No study area intersections would operate at unacceptable LOS in 2014 or buildout without-project conditions. The highest ICU value for with-project conditions is 1.80 at one intersection during AM peak hour in 2014 for Scenario 1 (the corresponding ICU value at that intersection in without-project conditions is 0.47). Thus, it is expected that the forecast reduction in project-generated traffic by this alternative would reduce the significant and unavoidable traffic impacts of the proposed project to less than significant with mitigation incorporated.



7. Alternatives to the Proposed Project

7.5.15 Utilities and Service Systems

As shown previously in Table 7-1, this alternative would use about 42 percent less water and generate about 42 percent less wastewater than the proposed project. This alternative would generate about half as much solid waste as the proposed project. The No Project/Previously Approved Development Alternative would require utility extensions to the project site, as would the proposed project. Note that previously approved developments on multiple nearby tracts would require utility extensions near the project site even if neither of these two scenarios were developed.

7.5.16 Conclusion

The No Project/Previously Approved Development Alternative would reduce impacts to transportation and traffic from significant and unavoidable for the proposed project to less than significant with mitigation incorporated. Significant and unavoidable impacts of the proposed project to air quality and noise would also be reduced by this alternative, but would remain significant and unavoidable. This alternative would reduce impacts to biological resources, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, and utilities and service systems. Impacts of the proposed project to each of those resources would be less than significant or less than significant with mitigation incorporated. This alternative would increase impacts to recreation. Impacts to aesthetics, population and housing, and public services would be the same.

This alternative would not achieve any of the project objectives.

- Provide integrated educational facilities for schoolchildren in grades 9–12 on one site;
- Relieve serious overcrowding at other District high schools serving the Santa Clarita Valley;
- Allow students within the community of Castaic to attend schools in their neighborhoods;
- Provide an additional high school to reduce reliance on the use of temporary portable classrooms in other District-operated high schools;
- Provide a new high school to serve existing and future population growth within the District's service boundaries;
- Comply with the Division of State Architect's (DSA) requirements for New School Construction related to Fire Life Safety, Structural and Access Compliance;
- Comply with the California Department of Education's (CDE) design standards and policies for new school construction in designing the needed school facilities;
- Maximize the use of state funds for site acquisition and construction of the needed school facilities.

7.6 ALTERNATIVE 3 – REDUCED INTENSITY ALTERNATIVE

In this alternative, student capacity would be capped at 1,600 students, which is the maximum enrollment at which one 2-lane public access road via the eastern route, plus gated emergency access via Romero Canyon Road south of the school site, would provide adequate access to the school. Changes to the conceptual site plan in this alternative would include reducing the number of classroom and CTE buildings from eight to five; slight reductions in the size of the gymnasium and performing arts buildings; reducing the

7. Alternatives to the Proposed Project

numbers of playfields to one baseball field, one softball field, one soccer field, plus the stadium football/soccer field; commensurate reductions in the numbers of hardcourts and tennis courts; and reduction in parking from 868 spaces to about 535 spaces. The size of the campus, including detention/evaporation basins, would be reduced in this alternative from 71.4 acres to about 45 acres. The entire campus in this alternative would be located in the eastern two-thirds of the proposed project campus site, away from the landslide removal area in the western part of the site. One 750,000-gallon aboveground water tank would be developed near the southwest corner of the school site in this alternative and in the proposed project. Operation of the school would be the same as in the proposed project except for the reduction in capacity. Vehicle trip generation by this alternative is estimated at 4,544 trips per day compared to the 7,384 trips per day of the proposed project.

7.6.1 Aesthetics

Impacts to the visual character of the site and its surroundings would be reduced in this alternative, as the southern access road would not be developed and the size of the school would be reduced from 71.4 acres to about 45 acres. Lighting impacts would also be somewhat reduced for this alternative due to the reduced number of lit playfields—four in this alternative compared to seven in the proposed project—and to fewer security lights on buildings and in parking lots in this alternative. However, impacts to visual character and to nighttime lighting would remain significant and unavoidable in this alternative.

7.6.2 Air Quality

This alternative would generate the same magnitude of criteria air pollutants from construction activities as the proposed project because this alternative would require similar construction equipment for construction of the site. However, under Scenario 2 with two access roads, this project alternative would have less construction emission because only one road would be constructed to the site. However, overall this alternative would have similar construction-related air quality impacts and construction-related air quality impacts would remain significant and unavoidable.

This alternative would result in an approximately 38 percent reduction in vehicle trips. Therefore, criteria air pollutant emissions generated by operation of this alternative would be substantially less compared to the proposed project. (Although the smaller high school would generate fewer trips and traffic in the area would be reduced, this alternative would require that 1,000 future students not accommodated at this school travel to remote schools outside their attendance area. This would result in greater vehicle miles travelled and greater pollutant emissions elsewhere).

7.6.3 Biological Impacts

This alternative would generate GHG emissions from construction activities, energy use (natural gas and purchased electricity), water use/wastewater generation, waste disposal, and mobile sources. GHG emissions from onsite energy use, waste disposal, and traffic would be reduced in this alternative by approximately 38 percent because of the cap in enrollment. In addition, total construction emissions would be slightly reduced in this alternative because the southern access route would not be developed in this alternative and a slightly reduced construction building effort on the school site. GHG emissions impacts of this alternative would be slightly less than compared to the proposed project.

7.6.4 Cultural Resources

Impacts to cultural resources would be reduced in this alternative, since the grading area of this alternative would be about 82 acres less than that of the proposed project: about 26 acres less for the school site, and



7. Alternatives to the Proposed Project

56 acres less for the southern access road that would not be developed in this alternative. Cultural resources impacts would be less than significant after mitigation in this alternative, as they would be for the proposed project.

7.6.5 Geology and Soils

Geology and soils impacts would be reduced for this alternative due to the reduction in grading area of 56 acres for the southern access road and about 26 acres for the school site. It is conservatively estimated that all the landslide removals required for the school site in the proposed project would be required for this alternative as well. Geology and soils impacts would be less than significant after mitigation for this alternative, as they would be for the proposed project.

7.6.6 Greenhouse Gas Emissions

Operational emissions from onsite energy use and from traffic would be reduced in this alternative by about 38 percent due to the reduction in capacity. Construction emissions would be reduced in this alternative due to the southern access route not being developed in this alternative and due to the reduced construction effort on the school site. Greenhouse gas emissions impacts of this alternative would be less than significant for this alternative and for the proposed project. Although the smaller high school would generate fewer trips and traffic in the area would be reduced, this alternative would require that 1,000 future students not accommodated at this school travel to remote schools outside their attendance area. This would result in greater vehicle miles travelled and greater GHG emissions.

7.6.7 Hazards and Hazardous Materials

Impacts of this alternative would be the same as those of the proposed project regarding existing hazardous materials on the project site, such as the abandoned oil well that requires reabandonment. Impacts related to hazardous materials that would be used during project construction would be somewhat reduced in this alternative due to the reduced construction effort for the school and the southern access route not being developed. Somewhat fewer people would be placed on a campus downslope from a proposed aboveground water tank in this alternative; flood hazards from the tank would be less than significant in this alternative and for the proposed project. In this alternative, somewhat fewer people would be placed on a campus in a Very High Fire Hazard Severity Zone; after compliance with state and Los Angeles County Fire Department (LACoFD) regulations, wildfire hazards would be less than significant for this alternative and for the proposed project. Overall, hazards and hazardous materials impacts would be slightly reduced in this alternative.

7.6.8 Hydrology and Water Quality

Drainage impacts would be reduced in this alternative due to the smaller school site, because the southern access road would not be developed, and due to the reduced size of the campus. Roadway protection along a segment of the southern access route would not be required in this alternative. Detention/evaporation basins would be somewhat smaller for this alternative. It is assumed that retention basins at the foot of the landslide removal in the western part of the project site would be developed in this alternative.

Water quality impacts would be reduced in this alternative due to the smaller school site and enrollment, and due to the southern access route not being developed in this alternative.

In this alternative, somewhat fewer people would be placed downslope from a proposed water tank; flood hazards from the tank would be less than significant for this alternative and for the proposed project. Overall,

7. Alternatives to the Proposed Project

hydrology and water quality impacts would be reduced in this alternative but would remain less than significant, as they would be for the proposed project.

7.6.9 Land Use and Relevant Planning

Although reduced in size, the land use under this alternative remains the same and would remain less than significant relative to land use and relevant planning.

7.6.10 Noise

Construction noise impacts would be reduced in this alternative due both to the reduced construction effort on the school site and to the southern access route not being developed in this alternative. However, construction noise impacts would still remain significant and unavoidable in this alternative because the Sloan Canyon access route would need to be constructed generating significant noise impacts at residential uses. Traffic noise during on-going operations of the high school would be reduced in this alternative, but would remain significant and unavoidable, as they would for the proposed project. With a reduced intensity of enrollment and the related school activities, noise from day-to-day operations of the school would be reduced as compared to the proposed project.

7.6.11 Population and Housing

This alternative would not induce growth in the project region, since the school in this alternative would relieve existing overcrowding at District high schools and would accommodate planned growth in and near Castaic. The same is true for the proposed project. Population and housing impacts would be neutral between this alternative and the proposed project, and less than significant for each scenario.



7.6.12 Public Services

Demands for fire protection, emergency medical services, and police protection would be somewhat reduced in this alternative compared to the proposed project due to the reduced capacity of this alternative. Neither this alternative nor the proposed project would create demands for schools, parks, or libraries, each of which are proportional to the population of the facilities' service areas. Overall, public services impacts would be slightly reduced in this alternative and would be less than significant in each of the two scenarios.

7.6.13 Recreation

This alternative would not increase use of offsite recreational facilities and would not involve development of new or expanded offsite recreational facilities. The school in this alternative would include fewer athletic facilities than the proposed project, proportional to the reduced capacity. Development of this alternative would have no adverse impact on dedication of the alignment of the adopted and planned county trail alongside Romero Canyon Road. Recreation impacts would be similar and less than significant in each of the two scenarios.

7.6.14 Transportation and Traffic

Vehicle trip generation by this alternative is forecast as 4,544 trips per day compared to 7,384 trips per day for the proposed project. Development of this alternative would have significant impacts to two intersections in the existing plus project condition, four intersections in the short-term (2014) condition, and one intersection in the buildout condition (see Table 7-2). After implementation of mitigation measures detailed in Section 5.14, *Transportation and Traffic*, this alternative would have no significant and unavoidable traffic

7. Alternatives to the Proposed Project

impacts.¹ Traffic impacts would be reduced by this alternative, since the proposed project would have significant and unavoidable impacts to three intersections in the existing plus project condition, three intersections in the 2014 short-term condition, and one intersection in the buildout condition.

This alternative would require that many students make longer auto trips to reach the school: were both access route options developed for this alternative, 42 percent of school trips are forecast to be by the eastern access route and 58 percent of trips by the southern route. Trips that would use the southern route in the proposed project would be required to use the eastern route in this alternative.

Impacts of this alternative to CMP roadways would be reduced for this alternative and would be less than significant in each of the two scenarios. All other transportation and traffic impacts—design hazards, traffic and pedestrian hazards, access to arterial roadways, visibility at intersections, emergency access, pedestrian, bicycle, and public transit facilities, and parking—would be the same for this alternative as for the proposed project, and would be less than significant for each of the two scenarios.

Although the smaller high school would generate fewer trips and traffic in the area would be reduced, this alternative would require that 1,000 future students not accommodated at this school travel to remote schools outside their attendance area. This would result in greater vehicle miles travelled and greater traffic impacts elsewhere.

Table 7-2
Traffic Impacts Summary: Reduced Intensity Alternative

<i>Year</i>	<i>School Capacity</i>	<i>Scenario*</i>	<i>Intersections Significantly Impacted</i>
Existing plus Project	1,600	1	• The Old Road at Parker Road • Sloan Canyon Road at Parker Road
		2	None
Short Term (2014)	1,600	1	• Sloan Canyon Road at Quail Valley Road • Parker Road at Southbound I-5 Ramp • The Old Road at Parker Road • Sloan Canyon Road at Parker Road
		2	• Sloan Canyon Road at Parker Road

*For either Option A or Option B.

7.6.15 Utilities and Service Systems

Impacts of this alternative to water supplies, wastewater treatment capacity, solid waste disposal capacity, and energy use would be reduced somewhat compared to those of the proposed project due to the reduced capacity. The capacity of this alternative, 1,600 students, is 61.5 percent of that of the proposed project. Therefore, utility demands for this alternative compared to those of the proposed project are:

- Water demand: 24,000 gallons per day (gpd) (proposed project: 39,000 gpd)
- Wastewater generation: 19,200 gpd (proposed project: 31,200 gpd)
- Solid waste generation: 960 pounds per day (ppd) (proposed project: 1,560 ppd)

¹ A significant and unavoidable impact is identified for Scenario 2 for the short-term (2014) condition at 1,600 students capacity. However, Scenario 2 is development of both the eastern and southern access routes; in this alternative, only the eastern access route would be developed (that is, Scenario 1). No significant and unavoidable traffic impacts are identified for Scenario 1 for the short-term (2014) condition at 1,600 students capacity.

7. Alternatives to the Proposed Project

- Electricity demand: 1,148,000 kWh per year (proposed project: 1,865,000 kWh per year)
- Natural gas demand: 24,600 therms per year (proposed project: 40,000 therms per year)

Impacts would be less than significant in each of the two scenarios.

7.6.16 Conclusion

This alternative would reduce one significant and unavoidable impact of the proposed project, to transportation and traffic, to less than significant after implementation of mitigation. The proposed project would have significant and unavoidable traffic impacts to up to three intersections in the short-term (2014) condition, depending on the access route scenario chosen, and to one intersection in the buildout condition for Scenario 1. The other significant and unavoidable impacts of the proposed project—to aesthetics, air quality, and noise—would be reduced by this alternative, but would remain significant and unavoidable. This alternative would reduce 10 other impacts of the proposed project—to biological resources, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, public services, recreation, and utilities and service systems. For all 10 impacts, the significance level for this alternative would be the same as for the proposed project, that is, either less than significant or less than significant with mitigation incorporated. Impacts on population and housing would be neutral for this alternative compared to the proposed project. This alternative would not increase any impacts compared to the proposed project.

This alternative would achieve all of the objectives of the proposed project but to a lesser degree. Provide integrated educational facilities for schoolchildren in grades 9–12 on one site;

- Relieve serious overcrowding at other District high schools serving the Santa Clarita Valley;
- Allow students within the community of Castaic to attend schools in their neighborhoods;
- Provide an additional high school to reduce reliance on the use of temporary portable classrooms in other District-operated high schools;
- Provide a new high school to serve existing and future population growth within the District's service boundaries;
- Comply with the Division of State Architect's (DSA) requirements for New School Construction related to Fire Life Safety, Structural and Access Compliance;
- Comply with the California Department of Education's (CDE) design standards and policies for new school construction in designing the needed school facilities;
- Maximize the use of state funds for site acquisition and construction of the needed school facilities.



7.7 ALTERNATIVE 4 – ROMERO CANYON ALTERNATIVE SITE

An Initial Study and Notice of Preparation for this proposed high school site (referenced as Alternative Site 1) was circulated from October 12, 2011 to November 10, 2011.

The site is along the east and west sides of Romero Canyon Road; the eastern site boundary is approximately two miles west of the intersection of Parker Road and Sloan Canyon Road and approximately

7. Alternatives to the Proposed Project

0.5 mile from the closest point along Sloan Canyon Road; the southern site boundary is approximately two miles north of the intersection of Hasley Canyon Road and Romero Canyon Road.

The new high school would have the same capacity as the proposed project. The site is 114 acres (in Parcels 1 and 4 of Tract 47807) with a net 55 usable acres. The proposed project site is 198 acres with a 71.4 acre campus. The Alternative 4 site partially overlaps the current project site but is centered farther west.

The project on this alternative site would be similar to the proposed project: approximately 240,000 to 265,000 square feet of building area, including several classroom buildings, an administration building, a library, a performing arts center with up to an 500-seat capacity, a multipurpose room and kitchen, a physical education building including large and small gymnasiums and administrative offices, a 5,000-seat football/soccer stadium with a running track, tennis courts, basketball courts, baseball and softball fields, and other play fields. The buildings would be one or two stories high, and the stadium and other fields would be lighted for nighttime use. Broadcasting facilities, including possible cellular, television, and satellite transmission may also be provided. The campus would include onsite parking for students, staff, and visitors. School access options would be the same as the proposed project.

7.7.1 Aesthetics

This alternative would significantly change the topography of the site, grading the hills and canyons to create building pads and to remove landslides. The project would develop several buildings on the site ranging from one to three stories high, as would the proposed project. Changes to the visual character of the site would be more pronounced at this location because a greater portion of the western ridgelines would be graded. Impacts to the visual character of the site would be significant and unavoidable.

Development of this alternative would introduce new light sources to the project site including field lighting for several athletic fields. Nighttime lighting impacts of this alternative would be significant and unavoidable.

7.7.2 Air Quality

This site would require a similar amount of roadway construction and infrastructure (electricity, gas, water, sewer, etc.) leading to Romero Canyon area. Remedial grading to remove an existing landslide would occur within Parcel 4. Because of the rugged topography, this site would require significantly more grading and earthwork to prepare the site for construction. The additional construction would increase emissions; however, the site would require similar daily off-road construction equipment use but could likely be constructed in longer timeframe compared to the proposed project. Consequently, this alternative would increase construction emissions associated with the proposed project. Therefore, this alternative would substantially increase construction-related air quality impacts.

Operation of a 2,600 student school at the Romero Canyon site would generate a similar operational phase emissions compared to the proposed project. Trip generation between the proposed project and this alternative would be the same; and therefore, criteria air pollutant emissions would be similar compared to the proposed project. This alternative would have similar operational phase air quality impacts compared to the proposed project and impacts are less than significant.

7.7.3 Biological Resources

Vegetation types onsite include California sagebrush series, chamise series, California annual grassland series, and disturbed areas. Three special-status plant species occur on this alternative site: coast live oak (23 trees), slender mariposa lily, and Pierson's morning glory.

7. Alternatives to the Proposed Project

Overall, biological resource impacts would be similar to the proposed project because of the overlap of the project sites. Therefore impacts would be similar.

7.7.4 Cultural Resources

No archaeological or historic resources were identified on this alternate site. However, buried historic or archaeological resources could be present in site soils. Archaeological monitoring would be required for this alternative, as would be the case for the proposed project. Impacts of this alternative to historical and archaeological resources would be similar to those of the proposed project and would be less than significant with mitigation incorporated for each scenario.

This alternate site is underlain by Saugus Formation bedrock, which is considered highly sensitive for paleontological resources, under a thin layer of topsoil. Overall, impacts to cultural resources would be similar for this alternative as for the proposed project.

7.7.5 Geology and Soils

There are no active faults within or adjacent to the project site. The nearest known active faults to the site are the San Gabriel Fault roughly 1.5 miles to the northeast, and the Holser Fault about 2.5 miles to the south.

A majority of the identified landslides are on east-facing slopes. Development of this site would require significant grading and engineering input to address several key geotechnical issues: 1) landslide removal, 2) slope stability of the proposed 380-foot-high cutslope, and 3) settlement of up to 90-foot-deep fills beneath the building pad. Overall, geology and soils impacts would be greater in this alternative due to the increased amount of landslides or potential landslides on this site compared to the proposed project site.



7.7.6 Greenhouse Gas Emissions

This alternative would generate GHG emissions from construction activities, energy use (natural gas and purchased electricity), water use/wastewater generation, waste disposal, and mobile sources. GHG emissions from onsite energy use, waste disposal, water/wastewater, would be the same as the proposed project. Transportation emissions would be similar, but since the proposed project is in the same basic location as the proposed project. In contrast, total construction emissions would be higher in this alternative because more grading and earthwork, even with the smaller development footprint. Overall, GHG emissions impacts of this alternative would be greater compared to the proposed project.

7.7.7 Hazards and Hazardous Materials

No recognized environmental concerns (RECs) were identified for this alternate site. No hazardous materials sites were identified on or next to the site. This alternate site is in a Very High Fire Hazard Severity Zone mapped by the California Department of Forestry and Fire Protection (CAL FIRE 2007), as is the proposed site. Amounts and types of hazardous materials that would be used in project construction and operation would be similar for this alternative as for the proposed project. Overall, hazards and hazardous materials impacts would be similar to the proposed project.

7.7.8 Hydrology and Water Quality

The project site is not in a 100-year flood hazard area. The project would alter the site's drainage pattern and may increase the amount of stormwater runoff generated at the site. The project would have a retention basin to regulate the rate and amount of surface runoff leaving the site. Pollutants that would be introduced

7. Alternatives to the Proposed Project

to this alternate site by project construction and operation and that could contaminate water would be similar to those for the proposed project. This alternative would require implementation of BMPs for water quality protection in project design, construction, and operation, as would the proposed project. Water quality impacts would be similar for this alternative and the proposed project, and would be less than significant in each scenario.

7.7.9 Land Use and Planning

This site has a zoning designation of A-2-1, Light Agriculture; and General Plan designations of Hillside Management and Non-Urban 1 (0.5 residential unit per acre) under the Santa Clarita Valley Area Plan. Public K-12 schools are permitted in the A-2-1 Zone with a Conditional Use Permit. As with the proposed project, the District can exempt a school site from local zoning codes pursuant to California Government Code Section 53094. Land surrounding the site is mostly zoned A-2-2, Heavy Agriculture. There is no zoning on surrounding land for land uses that would pose substantial health risks to students. There are no known past uses of the site that could pose health risks to students. Land use impacts of this alternative would be slightly reduced due to the abandoned oil well on the proposed project site requiring re-abandonment before development of a school on that site.

7.7.10 Noise

This alternative requires a greater amount of grading and earthwork but the additional grading would be farther away from existing residences, so construction noise would be similar to the proposed project.

Traffic noise during operations of the high school, the expected increase in total flows on the roadways would significantly increase. As such, it is expected that operations traffic noise impacts would be significant. This alternative would generate the same amount of traffic and would increase traffic noise by about the same amount as the proposed project. This alternative would have the significant and unavoidable traffic noise impacts to adjacent residents.

At this alternative site, sound levels from stationary sources at the school facility, including stadium events, band practice, and use of outdoor athletic facilities, would be similar to the proposed project.

7.7.11 Population and Housing

There are no residential units or residents on this alternate site, and this alternative would not displace housing or residents. The school in this alternative would relieve overcrowding in existing District high schools and accommodate planned growth in the region, as would the proposed project. Neither this alternative nor the proposed project would induce substantial growth in the region. Impacts on population and housing would be similar to the project.

7.7.12 Public Services

This alternative would create demand for one additional Los Angeles County Sheriff's Department school resource officer, as would the proposed project. This alternative would require a second access route for emergency access to the school site, as would the proposed project. This alternative would be mandated to comply with Los Angeles County Fire Department requirements regarding site access, as would the proposed project. This alternative would have a favorable impact to school facilities and would not impact library facilities or services. Overall, impacts to public services of this alternative would be similar to the proposed project.

7. Alternatives to the Proposed Project

7.7.13 Recreation

This alternate would include development of on-campus athletic facilities that would be available for community use outside of school hours, as would the proposed project. Neither scenario would require students to use off-site recreational facilities or would develop such off-site facilities.

7.7.14 Transportation and Traffic

This alternative would develop a high school with the same capacity as that of the proposed project.

7.7.15 Utilities and Service Systems

This alternative would have similar wastewater generation and water demand to the proposed project, as the school capacity would be the same in each scenario.

7.7.16 Conclusion

This alternative would not reduce any significant and unavoidable impact of the proposed project. This alternative would be similar to the proposed project in most environmental topics, but greater impacts related to aesthetics, construction emissions, and geology and soils (grading).

This alternative would achieve all of the objectives of the proposed project.

- Provide integrated educational facilities for schoolchildren in grades 9–12 on one site;
- Relieve serious overcrowding at other District high schools serving the Santa Clarita Valley;
- Allow students within the community of Castaic to attend schools in their neighborhoods;
- Provide an additional high school to reduce reliance on the use of temporary portable classrooms in other District-operated high schools;
- Provide a new high school to serve existing and future population growth within the District's service boundaries;
- Comply with the Division of State Architect's (DSA) requirements for New School Construction related to Fire Life Safety, Structural and Access Compliance;
- Comply with the California Department of Education's (CDE) design standards and policies for new school construction in designing the needed school facilities;



Because of the greater amount of grading, this alternative would be more costly than the proposed project. Therefore, this alternative would not meet the objective to "maximize the use of state funds for site acquisition and construction of the needed school facilities."

7.8 ALTERNATIVE 5 – HASLEY-SLOAN ALTERNATIVE SITE

The Hasley-Sloan Alternative Site is a 70-acre site at the northeast corner of Hasley Canyon Road and Sloan Canyon Road, about 1.5 miles south of the proposed project site. The Hasley-Sloan site is rugged terrain with hilly topography and steep canyons on the eastern portion. A north–south trending ridgeline is in the

7. Alternatives to the Proposed Project

central portion of the site and Hasley Canyon Creek passes east-west through the southwest corner of the site. The relief across the property is about 180 feet, with elevations from about 1,300 feet above mean sea level (amsl) along Hasley Canyon Creek to 1,480 feet amsl. The site is undeveloped and used for grazing cattle and horses. The remnants of building pads for planned mobile homes are at the southern and northwest portions of the site. This alternative would involve improvement of Sloan Canyon Road to a two-lane paved road for about 0.9 mile from Hasley Canyon Road to Hillcrest Parkway.

Information in the environmental analysis of this alternative is based in part on a preliminary environmental screening of the Hasley-Sloan and Romero Canyon sites prepared by Padre Associates Inc. in August 2010. This screening document is one of the documents evaluating various alternative sites referenced above in Section 7.1.

7.8.1 *Aesthetics*

This alternative would change the topography of the site, grading the hills and canyons to a southwest slope with the elevation at the southwest corner of the site about 1,340 feet and about 1,408 feet at the northeast corner. The project would develop several buildings on the site ranging from one to three stories high, as would the proposed project. The proposed school would be on the scale of a suburban high school, which would be more intense development than on nearby properties. The Hasley-Sloan site is visible from Hasley Canyon Road, Sloan Canyon Road; adopted (though not developed) County trails along Hasley Canyon Road and Sloan Canyon Road, and residential properties near the site. Impacts to the visual character of the site would be significant and unavoidable and would be visible to a greater number of people as compared to the proposed project.

Development of this alternative would introduce new light sources to the project site including field lighting for several athletic fields. Nighttime lighting impacts of this alternative would be significant and unavoidable.

7.8.2 *Air Quality*

While a partial extension of utilities and roadway construction would be required on Sloan Avenue, this alternative would eliminate the need to develop site access roadways and infrastructure (electricity, gas, water, sewer, etc.) leading to Romero Canyon area. Development of a school site on the Hasley-Sloan Alternative would have a slightly smaller development footprint compared to the proposed project. Because of the hilly topography, development of a school at the Hasley-Sloan site would require similar daily off-road construction equipment use but could likely be constructed in shorter timeframe compared to the proposed project. This alternative would also eliminate the need for haul trucks, vendor trucks, and employee vehicles to drive on unpaved roadways during the first nine months of construction activities prior to roadways being paved. Consequently, this alternative would reduce construction emissions associated with the proposed project. It is likely that, with mitigation, construction emissions associated with this alternative would still exceed the SCAQMD significance thresholds. Therefore, this alternative would substantially reduce construction-related air quality impacts of the proposed project but would be significant.

Operation of a 2,600 student school at the Hasley-Sloan site would generate a similar operational phase emissions compared to the proposed project. However, the proposed project is better situated relative to planned housing, resulting in a slightly lower VMT compared to this alternative. However, trip generation between the proposed project and this alternative would be the same; and therefore, criteria air pollutant emissions would be similar compared to the proposed project. This alternative would have similar operational phase air quality impacts compared to the proposed project.

7. Alternatives to the Proposed Project

7.8.3 Biological Resources

Vegetation types onsite include California sagebrush series, chamise series, California annual grassland series, and disturbed areas. Three special-status plant species occur on this alternative site: coast live oak (23 trees), slender mariposa lily, and Pierson's morning glory. Habitat quality onsite has been reduced by intensive grazing. Special-status animals are not expected to occur onsite due to lack of suitable habitat or due to habitat degradation. While the western spadefoot toad was not observed breeding onsite in 2005 surveys, it was previously identified onsite and mitigation would be required unless five years of surveys show no presence of toads.

This alternative would require a bridge over Hasley Canyon, which is jurisdictional to the US Army Corps of Engineers (Corps) and to the California Department of Fish and Game (CDFG). About 0.8 acre of Corps jurisdictional area and 1.0 acre of CDFG jurisdictional area would be impacted. Biological resources impacts of roadway development would be reduced in this alternative; this alternative would involve construction of 0.9 mile of access road, whereas the proposed project under Scenario 2 would develop about 2.6 miles of offsite access roads. Overall, biological resources impacts would be slightly reduced in this alternative to those of the proposed project due to lessened impacts from roadway development; such impacts would be less than significant after mitigation for both this alternative and the proposed project.

7.8.4 Cultural Resources

No archaeological or historic resources were identified on this alternate site. However, buried historic or archaeological resources could be present in site soils. Grading would extend to shallower depths on this site, as topographic relief is less on this alternate site than on the proposed site, and, while landslides or potential landslides are present on this site, they are shallower – to tens of feet thick – than the landslides on the proposed project site. Archaeological monitoring would be required for this alternative, as would be the case for the proposed project. Impacts of this alternative to historical and archaeological resources would be similar to those of the proposed project and would be less than significant with mitigation incorporated for each scenario.

This alternate site is underlain by Saugus Formation bedrock, which is considered highly sensitive for paleontological resources, under a thin layer of topsoil. Overall, impacts to cultural resources would be similar for this alternative as for the proposed project.

7.8.5 Geology and Soils

There are no faults or Alquist-Priolo Earthquake Fault Zones on or near this alternate site, and the nearest known fault to the site is the Hosler Fault about one mile distant. Hazards from ground shaking would be similar for this alternate site as for the proposed project site, as both sites are in a seismically active region. Liquefaction could occur in the southern part of the site, which is underlain by alluvial sediments and where the historic depth to groundwater has been as little as 10 feet below ground surface. Soils on this alternate site have low expansion potential. Landslides or potential landslides were found onsite; most of the landslide deposits and colluvial deposits are expected to be removed during site grading. Overall, geology and soils impacts would be reduced in this alternative due to the smaller landslides or potential landslides on this site compared to the proposed project site. Impacts would be less than significant with mitigation implemented under either this alternative or the proposed project.



7. Alternatives to the Proposed Project

7.8.6 Greenhouse Gas Emissions

This alternative would generate GHG emissions from construction activities, energy use (natural gas and purchased electricity), water use/wastewater generation, waste disposal, and mobile sources. GHG emissions from onsite energy use, waste disposal, water/wastewater, would be the same as the proposed project. Transportation emissions would be similar, but since the proposed project is better situated relative to planned housing, this alternative would have slightly higher VMT and associated GHG emissions compared to the proposed project. In contrast, total construction emissions would be slightly reduced in this alternative because this alternative would eliminate the need to construct access roads and utilities to the school site and would have a slightly smaller development footprint. Overall, GHG emissions impacts of this alternative would be similar to the proposed project and would be less than significant.

7.8.7 Hazards and Hazardous Materials

No recognized environmental concerns (RECs) were identified for this alternate site in a Phase I Environmental Site Assessment (ESA) conducted by Padre Environmental as part of the 2010 site screening. No hazardous materials sites were identified on or next to the site in an environmental database search conducted as part of that ESA. One abandoned dry-hole oil well is located within 0.25 mile of the site. The Department of Toxic Substances Control (DTSC) issued a no further action determination for the site in 2002. There is one abandoned dry-hole oil well on the proposed project site that requires re-abandonment before development of that site as a school. DTSC issued a no further action determination for the proposed project site in 2012. This alternate site is in a Very High Fire Hazard Severity Zone mapped by the California Department of Forestry and Fire Protection (CAL FIRE 2007), as is the proposed site. Amounts and types of hazardous materials that would be used in project construction and operation would be similar for this alternative as for the proposed project. Overall, hazards and hazardous materials impacts would be similar for the two alternatives and would be less than significant in either alternative.

7.8.8 Hydrology and Water Quality

Parts of the western and southern portions of this alternate site are in 100-year flood hazard zones mapped by the Federal Emergency Management Agency (FEMA). Development of this alternative would involve construction of a bridge over the Hasley Canyon drainage; the bridge in conceptual design would be 280 feet long and 60 feet wide. It is assumed that parts of the bridge structure would be in the Hasley Canyon streambed. At completion the campus would slope southwestward. This alternative would involve construction of drainage improvements; it is assumed those improvements would discharge to Hasley Canyon drainage south of the site. Hydrology and drainage impacts would be greater for this alternative due to the bridge construction and to parts of the site being in a 100-year flood zone. This may create a significant and unavoidable impact not present in the current project.

Pollutants that would be introduced to this alternate site by project construction and operation and that could contaminate water would be similar to those for the proposed project. This alternative would require implementation of BMPs for water quality protection in project design, construction, and operation, as would the proposed project. Water quality impacts would be similar for this alternative and the proposed project, and would be less than significant in each scenario.

7.8.9 Land Use and Planning

This site has a zoning designation of A-2-1, Light Agriculture; and General Plan designations of Hillside Management and Non-Urban 1 (0.5 residential unit per acre) under the Santa Clarita Valley Area Plan. Public K-12 schools are permitted in the A-2-1 Zone with a Conditional Use Permit. As with the proposed project, the

7. Alternatives to the Proposed Project

District can exempt a school site from local zoning codes pursuant to California Government Code Section 53094. Land surrounding the site is mostly zoned A-2-2, Heavy Agriculture. There is no zoning on surrounding land for land uses that would pose substantial health risks to students. There are no known past uses of the site that could pose health risks to students. This alternative would be similar to the proposed project relative to land use and planning.

7.8.10 Noise

Construction noise impacts along potential access roadways would be reduced, both in duration and intensity, because this alternate site is closer to existing paved and multi-lane roadways than is the project site. Construction activities would require significantly less grading and earthwork because the site is less rugged. Thus, construction noise impacts would be less than the proposed project. This alternative would eliminate the significant and unavoidable construction noise impacts to adjacent residents.

Traffic noise during operations of the high school, the expected increase in total flows on the roadways would significantly increase. As such, it is expected that operations traffic noise impacts would be significant. This alternative would generate the same amount of traffic and would increase traffic noise by about the same amount as the proposed project.

At this alternative site, sound levels from stationary sources at the school facility, including stadium events, band practice, and use of outdoor athletic facilities, have the potential to reach residential receptors in the surrounding community areas. Because of the shorter distances and the less-shielding topographical characteristics sound levels can be expected to be higher for this alternative than for the proposed project site. Therefore noise impacts are anticipated to be greater.

7.8.11 Population and Housing

There are no residential units or residents on this alternate site, and this alternative would not displace housing or residents. The school in this alternative would relieve overcrowding in existing District high schools and accommodate planned growth in the region, as would the proposed project. Neither this alternative nor the proposed project would induce substantial growth in the region. Impacts on population and housing would be similar, and less than significant, for each scenario.

7.8.12 Public Services

This alternative would create demand for one additional Los Angeles County Sheriff's Department school resource officer, as would the proposed project. This alternative would require a second access route for emergency access to the school site, as would the proposed project. For this alternative the second route would be improvement of Sloan Canyon Road north about 0.9 mile to Hillcrest Parkway. After improvement Sloan Canyon Road would be a public road; no gated emergency access would be needed for this alternative. This alternative would be mandated to comply with Los Angeles County Fire Department (LACoFD) requirements regarding site access, as would the proposed project. This alternative would have a favorable impact to school facilities and would not impact library facilities or services. Overall, impacts to public services of this alternative would be neutral to those of the proposed project, and would be less than significant after mitigation for each scenario.

7.8.13 Recreation

This alternate would include development of on-campus athletic facilities that would be available for community use outside of school hours, as would the proposed project. Neither scenario would require



7. Alternatives to the Proposed Project

students to use off-site recreational facilities or would develop such off-site facilities. Adopted County trails extend along Hasley Canyon and Sloan Canyon roads. These trails have not been built; however, there is existing informal use of these routes. This alternative would not preclude future development of adopted trails along Hasley Canyon and Sloan Canyon, as the proposed project would not preclude future development of an adopted County trail along Romero Canyon Road. Recreation impacts of this alternative would be neutral to those of the proposed project, and would be less than significant in both scenarios.

7.8.14 Transportation and Traffic

This alternative would develop a high school with the same capacity as that of the proposed project. Trip generation would be equal for the two scenarios. Sloan Canyon Road would be improved by this alternative from an existing dirt road to a two-lane paved road about 0.9 mile from Hasley Canyon Road to Hillcrest Parkway. This alternative would have two access routes from the east: Hasley Canyon Road; and Hillcrest Parkway to Sloan Canyon Road. Significant cumulative traffic impacts were identified to two intersections in 2014 with-project conditions, and to two intersections in buildout conditions, in a traffic analysis done as part of the 2010 environmental screening. Mitigation measures were recommended that would reduce most traffic impacts of this alternative to less than significant. Transportation and traffic impacts would be reduced under this alternative compared to the proposed project.

7.8.15 Utilities and Service Systems

This alternative would have similar wastewater generation and water demand to the proposed project, as the school capacity would be the same in each scenario. There are existing water and sewer mains in Hasley Canyon Road near the project site. However, those mains may require upgrading to accommodate a 2,600-student high school. Also, construction of a new water tank would be required and a line to reach the tank would be required to provide adequate fire flows for the school. This is similar to what is required for the proposed project, although the water line to connect to the tank is much longer. Demands for electricity and natural gas likewise vary with the numbers of people using those utilities on a site, and would thus be similar for each of these two scenarios. There is an existing power line along the south side of Hasley Canyon Road near the site, and a natural gas line in Hasley Canyon Road next to the site. An extension of the power line and the gas line to the school site would be required; and each of these utility lines also may require upgrading to serve the proposed school. Solid waste generation by this alternative would be similar to that of the proposed project. This alternative would develop a storm drainage system, as would the proposed project. Overall, utilities and service systems impacts would be reduced in this alternative because the alternate site is closer to existing utility lines than is the proposed project, and required utility extensions for this alternative would be shorter. Impacts would be less than significant in each of the two scenarios.

7.8.16 Conclusion

This alternative would reduce one significant and unavoidable impact of the proposed project, to transportation and traffic, to less than significant after implementation of mitigation. The proposed project would have significant and unavoidable traffic impacts to up to three intersections in the short-term (2014) condition, depending on the access route scenario chosen, and to one intersection in the buildout condition for Scenario 1. Of the other significant and unavoidable impacts of the proposed project—to aesthetics, air quality, and noise—the impact to air quality would be reduced, but the impacts to aesthetics and noise would be increased. Also, this alternative would likely create a new significant and unavoidable impact on hydrology and water quality related to the adjacency of the creek.

This alternative would reduce three non-significant impacts of the proposed project—to biological resources, and geology and soils and utilities and service systems.

7. Alternatives to the Proposed Project

Eight impact categories would have roughly the same level of impact, including cultural resources, greenhouse gas emissions, hazards and hazardous materials, land use and planning, public services, and recreation.

This alternative would achieve all of the objectives of the proposed project.

- Provide integrated educational facilities for schoolchildren in grades 9–12 on one site;
- Relieve serious overcrowding at other District high schools serving the Santa Clarita Valley;
- Allow students within the community of Castaic to attend schools in their neighborhoods;
- Provide an additional high school to reduce reliance on the use of temporary portable classrooms in other District-operated high schools;
- Provide a new high school to serve existing and future population growth within the District's service boundaries;
- Comply with the Division of State Architect's (DSA) requirements for New School Construction related to Fire Life Safety, Structural and Access Compliance;
- Comply with the California Department of Education's (CDE) design standards and policies for new school construction in designing the needed school facilities;
- Maximize the use of state funds for site acquisition and construction of the needed school facilities.



7.9 ALTERNATIVE 6 – STERLING GATEWAY ALTERNATE SITE

This alternative site is in the Valencia Gateway area, in an area also referred to as the Valencia Commerce Center. The potential high school site is a portion of the approved vesting tentative parcel map (VTPM) 060030 (Sterling Industrial project). The site is at the end of Witherspoon Parkway. Commerce Center Drive and Hasley Canyon Road are the nearest arterial roadways and provide access to State Route 126 (SR-126) and Interstate 5 (I-5), respectively. When this site was being considered the Valencia Commerce Center was anticipated to experience additional growth as the area builds out.

A traffic study for the school on this alternative site was approved by the Los Angeles County Department of Public Works in 2008. Los Angeles County Board of Supervisors approved the project which included the school site and approximately 1.3 million square feet of industrial park uses. On the 116.6-acre undeveloped property, there are approximately 75 net build-able acres, of which the school would be built on 50 acres and the industrial park on the remaining 25 acres are presumed to be developed consistent with the site's approved uses. The school development would expand the existing urban development to the east.

The Chiquita Canyon Landfill is about 2,000 feet south of the site separated by a ridge. The site is surrounded to the east by industrial and commercial uses; to the west by rural residential uses and undeveloped land; and to the north by undeveloped land. The proposed high school would be constructed with a capacity for 2,600 students, and with core facilities to accommodate 2,600 students. In order to provide a worst case analysis, this study presumes a 2,600 student enrolment.

7. Alternatives to the Proposed Project

7.9.1 Aesthetics

This alternative would change the topography of the site, grading the hills and canyons. The project would develop several buildings on the site ranging from one to three stories high, as would the proposed project. The proposed school would be denser than the rural residential and undeveloped lands to the east and north, but on the same scale as industrial and commercial uses to the east. The development would be visible from the residential community of Val Verde to the west. Impacts to the visual character of the site would be significant and unavoidable.

Development of this alternative would introduce new light sources to the project site including field lighting for several athletic fields. Nighttime lighting impacts of this alternative would be significant and unavoidable.

7.9.2 Air Quality

This alternative would eliminate the need to develop site access roadways and infrastructure (electricity, gas, water, sewer, etc.) leading to Romero Canyon area. In addition, the Sterling Gateway site is at the foothills rather than nestled in the mountain location. Lastly, the development of a school at the Sterling Gateway site would be developed on a two-thirds of the acreage as the proposed project (includes construction of the roadway). As a result, development of a school at the Sterling Gateway site would require substantially less daily off-road construction equipment use and would be constructed in much shorter timeframe compared to the proposed project. This alternative would also eliminate the need for haul trucks, vendor trucks, and employee vehicles to drive on unpaved roadways during the first nine months of construction activities prior to roadways being paved. Consequently, this alternative would substantially reduce construction emissions associated with the proposed project. It is likely that, with mitigation, construction emissions associated with this alternative could be reduced to less than significant. Therefore, this alternative would substantially reduce construction-related air quality impacts of the proposed project and eliminate the significant unavoidable impact.

Operation of a 2,600 student school at the Sterling Gateway site would generate a similar operational phase emissions compared to the proposed project. However, the proposed project is better situated relative to planned housing, resulting in a slightly lower VMT compared to this alternative.

The Sterling Gateway site abuts the Valencia Commerce Center (a warehousing and industrial park) and is proximate to the Chiquita Canyon Landfill. The Chiquita Canyon Landfill now employs a landfill gas capture system (Ameresco project) that generates 10 megawatts (MW) of renewable energy, which was constructed in 2010. Odors and air toxics generated by the Chiquita Canyon Landfill have the potential to affect students at the high school. In addition, the warehousing/industrial park to the east generates a substantial amount of truck traffic. Trucks generate emissions from vehicle travel, idling, and from operation of transport refrigeration units if cold-storage is necessary. Because of the location of the school relative to these potential sources of air pollutant generators, this alternative would have higher air quality compatibility hazards and odor impacts compared to the proposed project. While objectionable odors may be detected at the school, it is not anticipated to be a frequent occurrence because the landfill is subject to SCAQMD's nuisance rule (Rule 402). However, diesel particulate matter generated by trucks at the Valencia Commerce Center would elevate concentrations of air toxics at the school. The magnitude of risk generated by proximity to the Valencia Commerce Center would depend on the number of trucks/idling characteristics and meteorological condition (e.g., predominant wind direction). Compared to the remote location of the Romero Canyon site of the proposed project, health risk impacts associated with this alternative are substantially greater and could generate a potentially significant health risk impact depending on the trucking operations and wind conditions. Therefore, this alternative would have higher air quality compatibility and odor impacts compared to the proposed project.

7. Alternatives to the Proposed Project

7.9.3 Biological Resources

Most of this alternate site is vegetated; vegetation onsite includes coastal sage scrub and four valley oak trees. One USGS blue-line stream extends east-west much of the way across the center of the site. The site contains foraging habitat for burrowing owl; 2.31 acres of suitable habitat for Pierson's morning glory, and 0.04 acre of suitable habitat for western spadefoot toad. This alternative would impact about 0.18 acre of Corps jurisdictional waters, and 0.37 acre of CDFG jurisdictional area including 0.2 acre of riparian vegetation. Biological resources impacts of this alternative would be reduced compared to the proposed project due to the reduced jurisdictional areas impacted, and because this alternative would not require development of new access roads. Impacts would be less than significant after mitigation, as would those of the proposed project.

7.9.4 Cultural Resources

Development of this alternative would disturb about 50 acres of the site. The site is vacant. Archaeological or historical resources could be buried in site soils. Development of this alternative would require archaeological monitoring, as would the proposed project. Impacts would be somewhat reduced due to this alternative not requiring development of new access roads compared to 2.6 miles of access roads required for the proposed project. Impacts to historic and archaeological resources would be less than significant after mitigation for each scenario.

Much of the bedrock underlying the Castaic region is highly sensitive for paleontological resources. Fossils could be buried onsite. Development of this alternative would require paleontological monitoring, as would the proposed project. Impacts to historic and archaeological resources would be less than significant after mitigation for each scenario.

7.9.5 Geology and Soils

Topographic relief is less on this alternate site than on the proposed project site: about 200 feet on this site (1,250 feet above mean sea level [amsl] to 1,450 feet amsl), compared to about 650 feet on the proposed project site. Considering also the smaller school site in this alternative, cut and fill quantities would be reduced compared to the proposed project. The Holser Fault passes through the southern part of the site; the Holser Fault shows evidence of activity within the last 700,000 years but is not considered an active fault (CGS 2012). No Alquist-Priolo Earthquake Fault Zone passes through or next to the site (CGS 2012). Parts of the site are in a Zone of Required Investigation for Liquefaction Hazard designated by the California Geological Survey (CGS 2002). The project site is in an area where bedrock landslides are known to occur, and parts of the site are in a Zone of Required Investigation for Earthquake-Induced Landslides designated by the California Geological Survey (CGS 2002). Development of this alternative would require a design-level geotechnical investigation with recommendations complying with Division of the State Architect and the California Department of Education; compliance with recommendations of the geotechnical investigation would be mandatory. Geology and soils impacts of this alternative would be similar to those of the proposed project, and would be less than significant after mitigation for each scenario.

7.9.10 Greenhouse Gas Emissions

This alternative would generate GHG emissions from construction activities, energy use (natural gas and purchased electricity), water use/wastewater generation, waste disposal, and mobile sources. GHG emissions from onsite energy use, waste disposal, water/wastewater, would be the same as the proposed project. Transportation emissions would be similar, but since the proposed project is better situated relative to planned housing, this alternative would have slightly higher VMT and associated GHG emissions.



7. Alternatives to the Proposed Project

compared to the proposed project. In contrast, total construction emissions would be substantially reduced in this alternative because this alternative would eliminate the need to construct access roads and utilities to the school site, would be developed on approximately two-thirds of the acreage (including the roadway), and would be at the foothills rather than the mountain location. Overall, GHG emissions impacts of this alternative would be similar to the proposed project and would be less than significant.

7.9.11 Hazards and Hazardous Materials

No hazardous materials sites on this alternate site are listed on the GeoTracker database maintained by the State Water Resources Control Board, or the EnviroStor database maintained by the DTSC (searches done July 20, 2012). The Chiquita Canyon Landfill is 2,000 feet south of this site. There are two aboveground water tanks offsite near the southeast corner of the site. The tanks are on a south-facing slope; in the event of tank rupture water released from the tanks would flow south away from this alternate school site. A plugged and abandoned dry hole oil well, Chevron Malis 1, is offsite near the west site boundary. The Hasley Canyon Oil Field is within 0.5 mile north of the site; there are several active and several abandoned oil wells within 0.5 mile of the site (DOGGR 2008). This alternate site is in a Very High Fire Hazard Severity Zone, as is the proposed project site. Hazards and hazardous materials impacts of this alternative would be greater than those of the proposed project due to the proximity of the site to truck traffic to and from the Valencia Commerce Center next to the site, several active and abandoned oil wells within 0.5 mile of the site, and the Chiquita Canyon Landfill south of the site.

7.9.12 Hydrology and Water Quality

The project would develop a storm drainage system; post-project drainage would be expected to flow downgrade to the east. This site is outside of 100-year and 500-year flood hazard zones, but is in an area of undetermined flood hazard (FEMA 2012b). Development of this alternative would not place people or structures in flood hazard zones. Hydrology and water quality impacts of this alternative would be similar to those of the proposed project.

Pollutants that would be introduced to this alternate site by project construction and operation and that could contaminate water would be similar to those for the proposed project. This alternative would require implementation of BMPs for water quality protection in project design, construction, and operation, as would the proposed project. Water quality impacts would be similar, and less than significant, for this alternative and for the proposed project.

7.9.13 Land Use and Planning

This alternative site is zoned MPD-DP (Industrial Planned Zone – Development Program) and is designated R (residential, non-urban) and I (Industrial) in the Santa Clarita Valley Area Plan. Public K-12 schools are permitted in the MPD-DP Zone. Land use impacts would be increased for this alternative due to the industrial zoning for the project site and to industrial uses next to the east site boundary.

7.9.14 Noise

Construction noise impacts along access roads would be reduced, both in duration and intensity, for this alternative, because the site is closer to existing paved and multi-lane roadways than is the project site. Additionally, this site would require less grading and earthwork because the site is less rugged and road construction would be significantly less. Because this site would have access through an industrial commercial development, it would not require road construction directly adjacent to residential land uses and would eliminate the significant and unavoidable roadway construction noise impact.

7. Alternatives to the Proposed Project

Traffic noise during operations of the high school, the expected increase in total flows on the roadways would significantly increase. As such, it is expected that operations traffic noise impacts would be significant. This alternative would generate the same amount of traffic and would increase traffic noise by about the same amount as the proposed project under Scenario 1. However because this site would carry most of the traffic along Commerce Center Drive and Hasley Canyon the traffic noise would be concentrated there and would be greater than the proposed project under Scenario 2 with two public roadways. Unlike the proposed project, the roadways where most of the traffic would occur, is not directly adjacent and level with noise sensitive uses (residential). This alternative would eliminate the significant and unavoidable traffic noise impacts to adjacent residents.

At this alternative site, sound levels from stationary sources at the built-out school facility, including stadium events, band practice, and use of outdoor athletic facilities, have the potential to reach substantial residential receptors in the adjoining community areas, particularly the residential tracts to the southwest near Hunstock Street. Topographical features associated with this alternative site may preclude substantial noise due to onsite, stationary activities (including stadium events) from propagating effectively into these residential areas, but this would need to be confirmed in a detailed noise propagation analysis. Given distances and potential topographical screening effects, operations noise from a school at this alternative site would be similar to the proposed project site.

7.9.15 Population and Housing

Development of this alternative would not displace residents or housing, as there are no residents and no housing on the site. The school in this alternative would relieve overcrowding in existing District high schools and accommodate planned growth in the region, as would the proposed project. Neither this alternative nor the proposed project would induce substantial growth in the region. Impacts on population and housing would be similar, and less than significant, for each scenario.



7.9.16 Public Services

This alternative would create demand for one additional Los Angeles County Sheriff's Department school resource officer, as would the proposed project. This alternative would be mandated to comply with Los Angeles County Fire Department (LACoFD) requirements regarding site access, as would the proposed project.² This alternative would have a favorable impact to school facilities and would not impact library facilities or services. Overall, impacts to public services of this alternative would be neutral to those of the proposed project, and would be less than significant after mitigation for each scenario.

7.9.17 Recreation

This alternate would include development of on-campus athletic facilities that would be available for community use outside of school hours, as would the proposed project. Neither scenario would require students to use off-site recreational facilities or would develop such off-site facilities. There are no adopted County recreation trails on or next to this alternate site, and development of this alternative would not adversely affect future development of an adopted County trail.

² The LACoFD requested that the proposed project include a helipad for emergency use by public safety agencies; the requested helipad is included in the site plan for the proposed project. It is unknown whether LACoFD would request that this alternative include a helipad.

7. Alternatives to the Proposed Project

7.9.18 Transportation and Traffic

A traffic evaluation for this alternative was conducted by Austin Foust in 2009. This alternative is estimated to generate 7,384 vehicle trips per day, the same as the proposed project. This alternative would require construction of a site access road from Avenue Penn about 450 feet west to the east site boundary. Vehicles could reach Commerce Center Drive from the site via Avenue Penn north to Witherspoon Parkway, or south and east on Avenue Penn, where it turns into Livingston Avenue, to Harrison Parkway. Significant impacts were identified to two intersections; mitigation measures were identified that would reduce these impacts to less than significant. Transportation and traffic impacts would be reduced by this alternative, and would be significant and unavoidable for the proposed project.

7.9.19 Utilities and Service Systems

This alternative would have similar wastewater generation and water demand to the proposed project, as the school capacity would be the same in each scenario. There are existing water and sewer mains in roadways just east of the site. However, those mains may require upgrading to accommodate a 2,600-student high school. Demands for electricity and natural gas likewise vary with the numbers of people using those utilities on a site, and would thus be similar for each of these two scenarios. There is an existing electricity and gas utilities serving the Valencia Commerce Center east of the site. An extension of electric and gas lines to the school site would be required; and each of these utility lines also may require upgrading to serve the proposed school. Solid waste generation by this alternative would be similar to that of the proposed project. This alternative would develop a storm drainage system, as would the proposed project. Overall, utilities and service systems impacts would be reduced in this alternative because the alternate site is closer to existing utility lines than is the proposed project, and required utility extensions for this alternative would be shorter. Impacts would be less than significant in each of the two scenarios.

7.9.20 Conclusion

This alternative would reduce the significant and unavoidable impacts of the proposed project related to transportation and traffic, and noise. This alternative would increase impacts relative to the proposed project concerning air quality (landfill and industrial emissions), hazards and hazardous materials (landfill and industrial materials), and land and planning. This alternative would reduce impacts of the proposed project—to biological resources, cultural resources, hydrology and water quality, and utilities and service systems.

This alternative would achieve all of the objectives of the proposed project.

- Provide integrated educational facilities for schoolchildren in grades 9–12 on one site;
- Relieve serious overcrowding at other District high schools serving the Santa Clarita Valley;
- Allow students within the community of Castaic to attend schools in their neighborhoods;
- Provide an additional high school to reduce reliance on the use of temporary portable classrooms in other District-operated high schools;
- Provide a new high school to serve existing and future population growth within the District's service boundaries;
- Comply with the Division of State Architect's (DSA) requirements for New School Construction related to Fire Life Safety, Structural and Access Compliance;

7. *Alternatives to the Proposed Project*

- Comply with the California Department of Education's (CDE) design standards and policies for new school construction in designing the needed school facilities;
- Maximize the use of state funds for site acquisition and construction of the needed school facilities.

7.10 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires a lead agency to identify the “environmentally superior alternative” and, in cases where the “No Project” Alternative is environmentally superior to the proposed project, the environmentally superior development alternative must be identified. One alternative is identified as the “environmentally superior” alternative:

- Reduced Intensity Alternative

This alternative would lessen significant and unavoidable transportation and traffic impacts to less than significant after implementation of mitigation. Twelve other impacts of this alternative would be reduced slightly or somewhat compared to those of the proposed project; however, the significance levels of these impacts would remain the same as for the proposed project: significant and unavoidable for three impacts, and either less than significant or less than significant or less than significant with mitigation implemented for 10 other impacts. Population and housing impacts would be the same for this alternative as for the proposed project. This alternative would achieve all of the objectives of the proposed project, but to a lesser degree than the proposed project.

Impacts of all alternatives relative to those of the proposed project are compared in Table 7-3.

Among the factors that may be used to reject alternatives are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts” (Guidelines Sec. 15126.6(c)).



7. Alternatives to the Proposed Project

This page intentionally left blank.

7. Alternatives to the Proposed Project

**Table 7-3
Comparison of Alternatives to the Proposed Project**

<i>Environmental Topic</i>	<i>No Project/No Development Alternative</i>	<i>No Project/Previously Approved Development Alternative</i>	<i>Reduced Intensity Alternative</i>	<i>Romero Canyon Alternative Site</i>	<i>Hasley – Sloan Alternative Site</i>	<i>Sterling Gateway Alternative Site</i>
Aesthetics	<	=	<	>	>	=
Air Quality	=	<	<	>	>	>
Biological Resources	<	<	<	=	<	<
Cultural Resources	<	<	<	=	=	<
Geology and Soils	<	<	<	>	<	=
Greenhouse Gas Emissions	=	<	<	>	=	=
Hazards and Hazardous Materials	<	<	<	=	=	>
Hydrology and Water Quality	<	<	<	=	>	=
Land Use and Planning	<	<	=	=	=	>
Noise	<	<	<	=	>	<
Population and Housing	<	=	=	=	=	=
Public Services	<	=	<	=	=	=
Recreation	<	>	=	=	=	=
Transportation and Traffic	<	<	<	=	<	<
Utilities and Service Systems	<	<	<	=	<	<

Notes:

< Impact considered less when compared with the proposed project.

= Impact considered equal to the proposed project.

> Impact considered greater when compared with the proposed project.

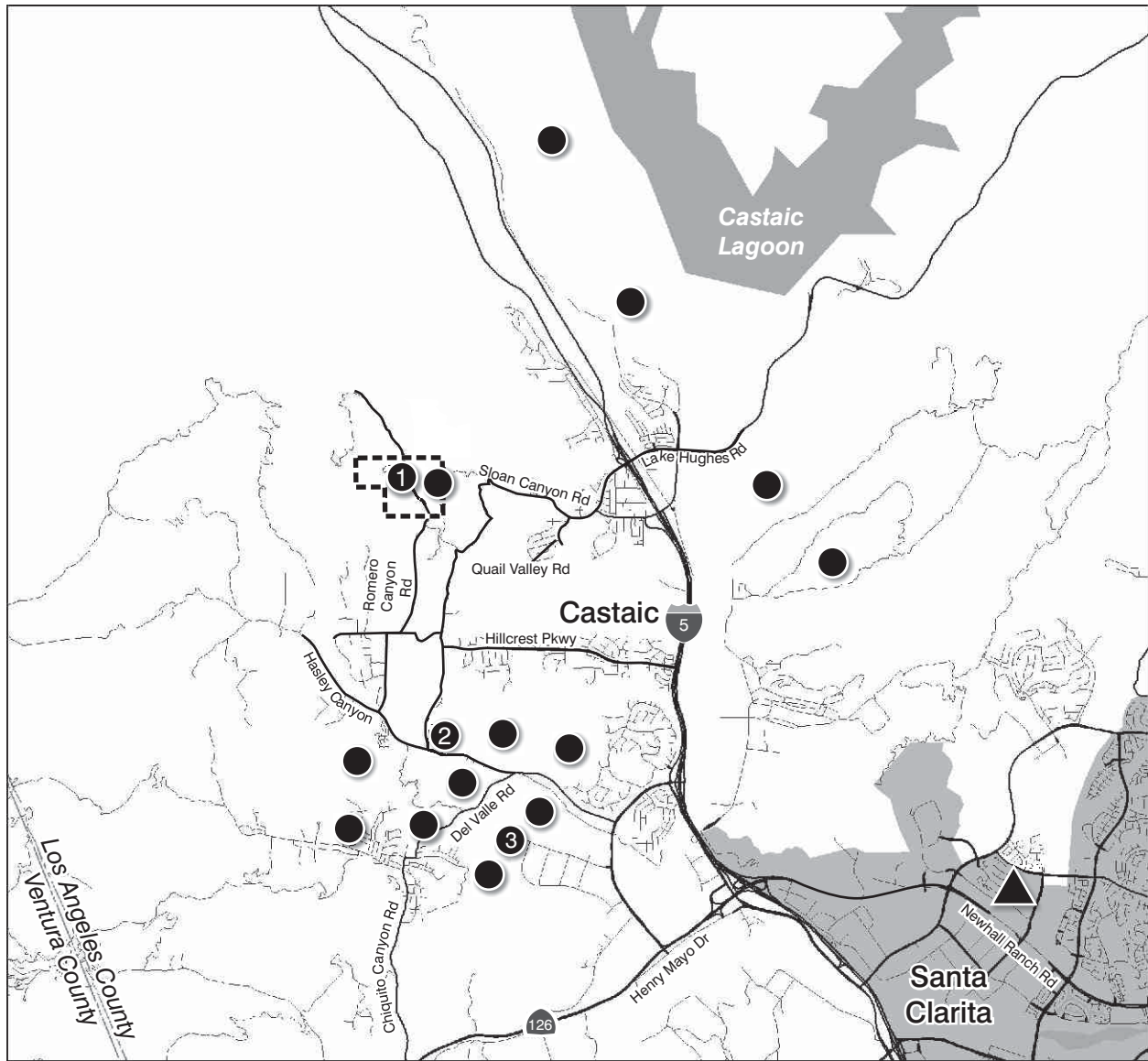
Bold/Shading: Environmental Topics identify those that have significant and unavoidable impacts under the **proposed project**. Only the environmental impacts considered significant and unavoidable are considered in determining the environmentally superior alternative.

7. Alternatives to the Proposed Project

This page intentionally left blank.

7. Alternatives to the Proposed Project

Alternative Sites



----- Project Site

● Alternative Sites Considered

① Romero Canyon

② Hasley-Sloan

③ Sterling Gateway

▲ Valencia High School

0 4,000
Scale (Feet)



7. Alternatives to the Proposed Project

This page intentionally left blank.

8. *Impacts Found Not to Be Significant*

California Public Resources Code Section 21003 (f) states: "...it is the policy of the state that... [a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical, and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." This policy is reflected in the State California Environmental Quality Act (CEQA) Guidelines (Guidelines) Section 15126.2(a), which states that "[a]n EIR [Environmental Impact Report] shall identify and focus on the significant environmental impacts of the proposed project" and Section 15143, which states that "[t]he EIR shall focus on the significant effects on the environment." The Guidelines allow use of an Initial Study to document project effects that are less than significant (Guidelines Section 15063[a]). Guidelines Section 15128 requires that an EIR contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant, and were therefore not discussed in detail in the Draft EIR.

8.1 ASSESSMENT IN THE INITIAL STUDY

The Initial Study prepared for the proposed project in January 2012 determined that impacts listed below would be less than significant. Consequently, they have not been further analyzed in this Draft EIR. Please refer to Appendix A for explanation of the basis of these conclusions. Impact categories and questions below are summarized directly from the CEQA Environmental Checklist, as contained in the Initial Study.



Impacts to Agricultural Resources

Threshold II.e, under Agricultural Resources (involves other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to nonagricultural use) was identified as potentially significant in the Initial Study due to potential impacts to forest land downstream of the site from activities onsite such as grading and construction. There are three blue-line streams on the project site; one of them passes west of the proposed school site and would not be affected by grading and construction. The other two blue-line streams are Romero Canyon and a tributary of Romero Canyon that flows into Romero Canyon near the south site boundary. Romero Canyon would be affected by grading and construction of the school and of some of the access roads.

The area assessed for presence of forest land extends 0.25 mile south from the south site boundary and extends 0.5 mile from the east site boundary to the west end of Parcel 3; thus, the area assessed was about 80 acres. The quarter-mile depth of the area assessed was chosen based on the width of the Zone of Influence used in the Land Evaluation and Site Assessment (LESA) Model developed by the California Department of Conservation for analyzing impacts to farmland. The width assessed is two parcels wide, with the dividing line between the parcels along Romero Canyon Road.

Forest land is defined as "land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits" (California Public Resources Code Section 12220[g]). There are very few trees in the area assessed; the trees present are concentrated in the floor and lower slopes of the Romero Canyon drainage. The existing tree cover in the area assessed is well below the 10 percent threshold of native tree cover in the definition of

8. Impacts Found Not to Be Significant

forest land. There is no forest land downstream next to the site boundary, and project development would not indirectly convert offsite forest land to non-forest uses.

No impacts were identified regarding the remaining four thresholds for agricultural resources in the Initial Study, included as Appendix A of this DEIR. As no impact is found respecting threshold II(e) here, agricultural resources are not analyzed in this DEIR.

Table 8-1
Impacts Found Not to Be Significant

<i>Environmental Issues</i>	<i>Initial Study Determination</i>
I. AESTHETICS. Would the project:	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?	No Impact
III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	
e) Is the boundary of the proposed school site within 500 feet of the edge of the closest traffic lane of a freeway or busy traffic corridor? If yes, would the project create an air quality health risk due to the placement of the School? [PRC § 21151.8 (a)(1)(D); Ed. Code § 17213 (c)(1)(C)]	No Impact
f) Create objectionable odors affecting a substantial number of people?	Less than Significant Impact
IV. BIOLOGICAL RESOURCES. Would the project:	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	No Impact
V. CULTURAL RESOURCES. Would the project:	
d) Disturb any human remains, including those interred outside of formal cemeteries?	No Impact

8. Impacts Found Not to Be Significant

Table 8-1
Impacts Found Not to Be Significant

<i>Environmental Issues</i>	<i>Initial Study Determination</i>
VI. GEOLOGY AND SOILS. Would the project:	
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	No Impact
VII. HAZARDS AND HAZARDOUS MATERIALS. Would the project:	
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less than Significant Impact
c) Does the proposed school site contain one or more pipelines, situated underground or aboveground, which carry hazardous substances, acutely hazardous materials or hazardous wastes, unless the pipeline is a natural gas line that is used only to supply natural gas to that school or neighborhood? [PRC § 21151.8 (a)(1)(C)]	No Impact
d) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	No Impact
f) Create an air quality hazard due to the placement of a school within one-quarter mile of: (a) permitted and nonpermitted facilities identified by the jurisdictional air quality control board or air pollution control district; (b) freeways and other busy traffic corridors; (c) large agricultural operations; and/or (d) a rail yard, which might reasonably be anticipated to emit hazardous air emissions, or handle hazardous or acutely hazardous material, substances, or waste? [PRC § 21151.8 (a)(2), Ed. Code § 17213 (b)]	No Impact
g) Is the school site in an area designated in a city, county, or city and county general plan for agricultural use and zoned for agricultural production, and if so, do neighboring agricultural uses have the potential to result in any public health and safety issues that may affect the pupils and employees at the school site? [Ed. Code § 17215.5 (a)] (Does not apply to school sites approved by CDE prior to January 1, 1997).	No Impact
h) Is the property proposed school site less than the following distances from the edge of respective power line easements: (1) 100 feet of a 50–133 kV line; (2) 150 feet of a 220–230 kV line; or (3) 350 feet of a 500–550 kV line? [CCR, Title 5 § 14010 (c)]	No Impact
i) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 [inclusive of Section 25356 of the Health & Safety Code] and, as a result, would it create a significant hazard to the public or the environment?	No Impact
j) Does the project site contain a current or former hazardous waste disposal site or solid waste disposal site and, if so, have the wastes been removed? [PRC § 21151.8 (a)(1)(A)]	No Impact
k) Is the proposed school site located on a site containing or underlain by naturally occurring hazardous materials?	No Impact
l) Is the proposed school site situated within 2,000 feet of a significant disposal of hazardous waste? [CCR, Title 5 § 14010 (t)]	No Impact



8. Impacts Found Not to Be Significant

Table 8-1
Impacts Found Not to Be Significant

Environmental Issues	Initial Study Determination
m) Is the proposed school site within two miles, measured by air line, of that point on an airport runway or potential runway included in an airport master plan that is nearest to the site? [Ed. Code § 17215 (a)&(b)] (Two nautical miles = 12,152 feet) (Does not apply to school sites acquired prior to January 1, 1966.)	No Impact
n) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	No Impact
VIII. HYDROLOGY AND WATER QUALITY. Would the project:	
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	No Impact
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	No Impact
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	No Impact
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	No Impact
IX. LAND USE AND PLANNING. Would the project:	
a) Physically divide an established community?	Less than Significant Impact
X. MINERAL RESOURCES. Would the project:	
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?	No Impact
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	No Impact
XI. NOISE. Would the project result in:	
b) Is the proposed school site located adjacent to or near a major arterial roadway or freeway whose noise generation may adversely affect the educational program? [CCR, Title 5 § 14010 (e)]	No Impact
f) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	No Impact
g) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	No Impact
XII. POPULATION AND HOUSING. Would the project:	
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	No Impact
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	No Impact

8. Impacts Found Not to Be Significant

Table 8-1
Impacts Found Not to Be Significant

<i>Environmental Issues</i>	<i>Initial Study Determination</i>
XIII. PUBLIC SERVICES. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	
c) Schools?	No Impact
d) Parks?	Less than Significant Impact
e) Other public facilities?	Less than Significant Impact
f) Does the site promote joint use of parks, libraries, museums, and other public services? [CCR, Title 5, § 14010 (o)]	Less than Significant Impact
XIV. RECREATION.	
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	Less than Significant Impact
XV. TRANSPORTATION/TRAFFIC. Would the project:	
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	No Impact
g) Is the proposed school site within 1,500 feet of a railroad track easement? [CCR, Title 5 § 14010(d)]	No Impact



8. Impacts Found Not to Be Significant

This page intentionally left blank.

9. Significant Irreversible Changes Due to the Proposed Project

Section 15126.2(c) of the CEQA Guidelines requires that an Environmental Impact Report (EIR) describe any significant irreversible environmental changes that would be caused by implementation of the proposed project. Implementation of Castaic High School would consist of construction and operation of a traditional comprehensive high school for 2,600 students.

- Implementation of the proposed project would include construction activities that would entail the commitment of nonrenewable and/or slowly renewable energy resources, human resources, and natural resources such as lumber and other forest products, sand and gravel, asphalt, steel, copper, lead, other metals, and water.
- The project would build and operate a high school with capacity for 2,600 students. The high school is expected to have a useful lifetime of 80 or more years. Operation of the high school would entail use of nonrenewable and/or slowly renewable energy resources and water, and would generate wastewater.
- Project site clearance and site grading would involve permanent changes to site topography and removal of natural vegetation.



9. Significant Irreversible Changes Due to the Proposed Project

This page intentionally left blank.

10. Growth-Inducing Impacts of the Proposed Project

Pursuant to Sections 15126(d) and 15126.2(d) of the CEQA Guidelines, this section is provided to examine ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Also required is an assessment of other projects that would foster other activities which could affect the environment, individually or cumulatively. To address this issue, potential growth-inducing effects will be examined through analysis of the following questions:

- Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?
- Would this project result in the need to expand one or more public services to maintain desired levels of service?
- Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?
- Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?



Please note that growth-inducing effects are not to be construed as necessarily beneficial, detrimental, or of little significance to the environment. This issue is presented to provide additional information on ways in which this project could contribute to significant changes in the environment beyond the direct consequences of developing the land use concept examined in the preceding sections of this EIR.

Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?

The project would extend roads and utilities into an area currently lacking that infrastructure. However, 16 related projects were identified in the project traffic impact analysis. Those projects to the north and east of the site have already been approved by Los Angeles County Board of Supervisors, and applications for the remainder have been submitted. The approved related projects will be developed whether or not the school is built. Roads and utility extensions that would serve the school would be built to serve those related developments whether the school was built or not. Schools are built in response to growth, and not before growth occurs; therefore, development of the related projects is not contingent on development of the school. Development of the school may accelerate installation of the roads and utility infrastructure somewhat, and may result in slight changes to the routing of the roads and/or infrastructure.

Would this project result in the need to expand one or more public services to maintain desired levels of service?

Project development would not require expansion of fire and emergency medical services, schools, libraries, or parks. The District would employ one Los Angeles County Sheriff's Department school resource officer at

10. Growth-Inducing Impacts of the Proposed Project

the school. The officer would focus on school security issues and would not represent an expansion of police resources available to the surrounding community.

Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?

Construction and operation of the proposed school would not have indirect economic effects that could significantly affect the environment. School operation would employ about 175 faculty and staff. The unemployment rate in Los Angeles County in February 2012 was 12.1 percent (EDD 2012). Therefore, it is expected that project employment would be absorbed from the local labor force rather than attract substantial numbers of new workers into the region. School construction would create short-term construction employment; however, construction employment is also expected to be absorbed from the local labor force rather than attract new workers into the region.

Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

The project would not involve any precedent-setting action that could lead to significant environmental effects. The District would exempt itself from Los Angeles County Zoning land use regulations for the site. All school districts in California have the authority to exempt themselves from local land use regulation under California Government Code Section 53094, and such action would not set a precedent. The project would involve the following annexations and removal of the site from utilities districts:

- Annexation of the site into the Newhall County Water District
- Annexation of the site into the Santa Clarita Valley Sanitation District
- Removal of the site from the Los Angeles County Water Works District No. 36

Annexations into and removals from utilities districts are common occurrences and would not set a precedent that could lead to significant environmental effects.

11. Organizations and Persons Consulted

Los Angeles County Sheriff's Department

Paul Becker
Captain, Santa Clarita Station

Gary T. K. Tse
Director, Facilities Planning Bureau

Los Angeles County Fire Department

John R. Todd
Chief, Forestry Division, Fire Prevention Bureau

Newhall County Water District

Stephen L. Cole
General Manager

11. Organizations and Persons Consulted

This page intentionally left blank.

12. Qualifications of Persons Preparing EIR

THE PLANNING CENTER

Dwayne Mears, AICP

Principal, Environmental Services and
School Facilities Planning

- BS California Polytechnic State University, San Luis Obispo, City and Regional Planning, 1978
- MRP, University of North Carolina, Chapel Hill, City and Regional Planning, 1980

Alice Houseworth, AICP, LEED AP

Senior Planner

- BS, California Polytechnic State University, Pomona, Urban and Regional Planning, 1996.

Michael Milroy

Associate Planner

- MS, Interdisciplinary Studies/Neuroscience, California State University, Long Beach, 2004
- BS, Biological Science, California State University Long Beach, 1999

Bob Mantey

Manager, Noise, Vibration, and Acoustics

- BS, Engineering, Harvey Mudd College, 1979

Nicole Vermilion

Manager, Air Quality and GHG Services

- MURP, University of California, Irvine, 2005.
- BA Environmental Studies and BS Ecology and Evolutionary Biology, University of California, Santa Cruz, 2002

Fernando Sotelo, INCE

Senior Scientist

- MS, Transportation Engineering, University of Southern California, 2001
- BS, Naval Engineering, University of Sao Paulo, Brazil, 1998



12. Qualifications of Persons Preparing EIR

This page intentionally left blank.

13. Bibliography

- Ballar, Michael. Los Angeles Rocks N' Roads. Geology of Castaic and Adjacent Areas. This page was last updated January 17, 2009. <http://www.scvresources.com/geology/castaic.htm>.
- Becker, Paul (Captain). 2012, April 19. Letter. Los Angeles County Sheriff's Department Santa Clarita Station.
- Bies and Hansen. 2003. *Engineering Noise Control: Theory and Practice*. New York: Spon Press.
- Bolt, Beranek and Newman. 1971. *Noise from Construction Equipment and Operations, Building Equipment and Home Appliances*. Prepared for the United States Environmental Protection Agency.
- Bureau of Land Management (BLM). "Visual Resource Management Manual." Section 8400 (1980). United States Department of the Interior.
- . 1978. *Visual Resource Management*. USDI Manual 8400. Washington, D.C.
- California Air Resources Board (CARB). 2005, April. *Air Quality and Land Use Handbook: A Community Health Perspective*.
- . 2006, November 1. EMFAC2007 Computer Model. Version 2.3.
- . 2007, April 20. *Proposed Early Actions to Mitigate Climate Change in California*.
- . 2007. *Air Pollution Data Monitoring Cards (2002, 2003, 2004, 2005, 2006)*. <http://www.arb.ca.gov/adam/cgi-bin/db2www/adamtop4b.d2w/start>.
- . 2007, February. *Ambient Air Quality Standards*. <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>.
- . 2007, July. *Area Designations: Activities and Maps*. <http://www.arb.ca.gov/desig/desig.htm>.
- California Climate Action Team (CAT). 2006, March. Climate Action Team Report to Governor Schwarzenegger and the Legislature. California Environmental Protection Agency.
- . 2007, April 20. *CAT Proposed Early Actions to Mitigate Climate Change in California*.
- California Gas and Electric Utilities. 2010, June 24. California Gas Report. http://www.socalgas.com/regulatory/documents/cgr/2010_CGR.pdf.
- California Department of Transportation (Caltrans), Division of Environmental Analysis. 2002. *Transportation Related Earthborne Vibration: Caltrans Experiences*. Technical Advisory, Vibration. TAV-02-01-R9601. Prepared by Rudy Hendricks.
- . California Scenic Highway Program. www.dot.ca.gov/hq/landarch/scenic/scpr/htm.

13. Bibliography

- California Energy Commission. (CEC). 2006. *Our Changing Climate, Assessing the Risks to California*. California Climate Change Center. Report CEC-500-2006-077.
- California Department of Education. DataQuest. <http://data1.cde.ca.gov/dataquest/>.
- California Department of Water Resources. 2003. *California's Groundwater*. Bulletin 118, Update 2003.
- . 1986. *Statutes and Regulations Pertaining to Supervision of Dams and Reservoirs*. Division of Safety of Dams.
- California Geological Survey (CGS), 2002. *Seismic Hazard Zone Report for the Val Verde 7.5-Minute Quadrangle, Los Angeles and Ventura Counties*. Seismic Hazard Zone Report 076.
- California Stormwater Quality Association (CASQA), 2003. *Stormwater Best Management Practice Handbook – New Development and Redevelopment*. January 2003.
- California Department of Resources Recovery and Recycling (CalRecycle). Active Landfills Profile for Puente Hills Landfill (19-AA-0053).
<http://www.calrecycle.ca.gov/profiles/Facility/Landfill/LFProfile1.asp?COID=19&FACID=19-AA-0053>.
- . 2012b, April 10. Facility/Site Summary Details: Sunshine Canyon City/County Landfill.
<http://www.calrecycle.ca.gov/SWFacilities/Directory/19-AA-2000/Detail/>.
- . 2012a, April 10. Facility/Site Summary Details: Chiquita Canyon Sanitary Landfill.
<http://www.calrecycle.ca.gov/SWFacilities/Directory/19-AA-0052/Detail/>.
- . 2009, December 30. Estimated Solid Waste Generation Rates.
<http://www.calrecycle.ca.gov/wastechar/WasteGenRates/default.htm>.
- Castaic Area Town Council (CATC). 2012a, April 5. Castaic Area History.
<http://www.castaicareatowncouncil.org/main19.html>.
- . 2012b, April 5. About the Council. <http://www.castaicareatowncouncil.org/main14.html>.
- . 2012c, April 5. Castaic Area Community Standards District.
<http://www.castaicareatowncouncil.org/main17.html>.
- Castaic Lake Water Agency (CLWA). 2011.
- Cole, Stephen L. General Manager. Newhall County Water District. Phone and e-mail correspondence. April 8, 2011.
- . 2012, June 19. E-mail. Newhall County Water District.
- Consolidated Sewer Management District of Los Angeles County. About Us.
http://dpw.lacounty.gov/SMD/SMD/Page_08.cfm.
- . 2000, September 26. Map N-1175.

13. Bibliography

- Federal Emergency Management Agency (FEMA), 2008. *Flood Insurance Rate Map (FIRM) No. 06037C0800F*. Dated September 26, 2008.
- Federal Highway Administration (FHWA). 1978, December. Federal Highway Traffic Noise Prediction Model, U.S. Dept. of Transportation. Report No. FHWA-RD77-108.
- . 1988. *Visual Impact Assessment for Highway Projects*. Publication No. FHWA-HI-88-054. Office of Environmental Policy. Washington, D.C.
<http://www.dot.ca.gov/ser/downloads/visual/FHWAVisualImpactAssmt.pdf>.
- Federal Transit Administration (FTA). 2006, May. *Transit Noise and Vibration Impact Assessment*. United States Department of Transportation.
- Fugro West, Inc., 2010. *Geotechnical Desktop Study, New Castaic High School, Romero Canyon Site, Tentative Tract 47807, Castaic Area, Los Angeles County, California*. Prepared for William S. Hart Union High School District.
- Impact Sciences, Inc. 2010, November. Revised Draft Program EIR for Santa Clarita Valley Area Plan. Section 3.16: Parks and Recreation. http://planning.lacounty.gov/assets/upl/project/ovov_2010-deir-3-16-parks-recreation.pdf.
- Intergovernmental Panel on Climate Change's (IPCC). 2001. *2001 IPCC Third Assessment Report*.
- International Dark-Sky Association (IDA). *International Dark-Sky Association Home Page*.
<http://www.darksky.org/>.
- Ittron. 2006, March. California Commercial End-Use Survey.
<http://www.energy.ca.gov/2006publications/CEC-400-2006-005/CEC-400-2006-005.PDF>.
- Kennedy/Jenks Consultants. 2011, June. Castaic Lake Water Agency 2010 Urban Water Management Plan. http://clwa.org/wp-content/uploads/2011/09/CLWA_2010UWMP_FINALReport_FINAL.pdf.
- . *Upper Santa Clara River Integrated Regional Water Management Plan (IRWMP)*.
- Los Angeles, County of, Waterworks Districts. About Us. Department of Public Works.
<http://dpw.lacounty.gov/www/web/aboutus.cfm>.
- . Water Sources. <http://dpw.lacounty.gov/www/web/watersources.cfm>.
- Los Angeles, County of, Department of Public Works. Solid Waste Information Management System.
<http://dpw.lacounty.gov/swims/default.asp>.
- . Pre-Defined Report: Detailed Solid Waste Disposal Activity Report by Jurisdiction of Origin.
http://dpw.lacounty.gov/swims/reports/predefined_master.asp?Action=GENERATEREPORT&rpt=23&rptType=DWDEXL.
- . 2006. *Hydrology Manual*. Water Resources Division, dated January 2006.
- . 2002. *Development Planning for Storm Water Management: A Manual for the Standard Urban Storm Water Mitigation Plan (SUSMP)*. Dated September 2002.



13. Bibliography

- Los Angeles, County of, Department of Parks and Recreation (DPR). 2012a, June 22. New Park Planning: TR 060678. http://parks.lacounty.gov/Parkinfo.asp?URL=cms1_033436.asp&Title=TR060678.
- . 2011, March 23. Parks and Gardens. <http://parks.lacounty.gov/Parkinfo.asp?URL=ParksGardens.asp&Title=Parks%20Gardens%20%20Trails>.
- Los Angeles, County of, Department of Regional Planning (DRP). 2012b. County's Rural Outdoor Lighting District Ordinance (Dark Skies). http://planning.lacounty.gov/view/rural_outdoor_lighting_district_ordinance.
- . 2012c. Chapter 22.44 SUPPLEMENTAL DISTRICTS. Castaic Area Community Standards District. http://search.municode.com/html/16274/_DATA/TITLE22/Chapter_22_44_SUPPLEMENTAL_DIS.html#32.
- . 2010, November. Revised Draft Santa Clarita Valley Area Plan. <http://planning.lacounty.gov/ovov>.
- Los Angeles, County of, Fire Department. Hometown Fire Stations. <http://fire.lacounty.gov/HometownFireStations/HometownFireStations.asp#Battalion06>.
- . 2005, August 5. Operations Bureau Map.
- Los Angeles, County of, Public Library. Castaic Library. <http://www.colapublib.org/libs/castaic/index.php>.
- Los Angeles, County of, Sanitation Districts. About Us. <http://www.lacsd.org/about/default.asp>.
- . Loadings for Each Class of Land Use. <http://www.lacsd.org/civica/filebank/blobdload.asp?BlobID=3531>.
- . Saugus Water Reclamation Plant. http://www.lacsd.org/about/wastewater_facilities/santa_clarita_valley_water_reclamation_plants/saugus.asp.
- . Valencia Water Reclamation Plant. http://www.lacsd.org/about/wastewater_facilities/santa_clarita_valley_water_reclamation_plants/valencia.asp.
- Los Angeles, County of, Sheriff's Department. About Us. <http://www.lasdhq.org/stations/for1/scv/aboutus.html>.
- Los Angeles Regional Water Quality Control Board (LARWQCB), 1994. *Water Quality Control Plan for the Los Angeles Basin (Basin Plan)* and amendments.
- Lund and Associates Engineering, Inc., 2010. *On-Site Hydrology Study for Romero Site – Castaic High School*.
- Lund, Tracy. Lund and Associates Engineering, Inc., Phone correspondence. March 21, 2011.
- Newhall County Water District. About / At a Glance. <http://www.ncwd.org/about.htm>.

13. Bibliography

- Office of Emergency Services (OES). 2009. *Dam Inundation Map for Castaic Dam*. April –June 2000, Version DVD 3, April 2009.
- Raza, Adriana (Customer Service Specialist). 2010, July 15. Letter. Los Angeles County Sanitation Districts.
- Rimpo and Associates. URBEMIS2007 Computer Model. Version 9.2.2.
- Santa Clarita Transit. 2012, January 8. Local Schedule.
<http://www.santaclaritatransit.com/Index.aspx?page=78>.
- Santa Monica Mountains Conservancy (SMMC). 2006, January 23. Joint Meeting Minutes.
http://smmc.ca.gov/pdf/minute_60.pdf.
- Society of Automotive Engineers, Inc. (SAE). 1971, October. *House Noise – Reduction Measurements for Use in Studies of Aircraft Flyover Noise*. AIR 1081.
- Sonoma Technology, Inc. CALINE4 Computer Model, Version 1.31.
- South Coast Air Quality Management District. (SCAQMD). 1993, April. *CEQA Air Quality Handbook*.
- . 2003, June. *Final Localized Significance Threshold Methodology*.
- . 2006, October. *Final Methodology to Calculate PM2.5 and PM2.5 Significance Thresholds*.
- . 2007, June. *Final 2007 Air Quality Management Plan*.
- . South Coast AQMD List of Current Rules. *California Air Resources Board*.
<http://www.arb.ca.gov/drdb/sc/cur.htm>.
- Southern California Association of Governments. 2012, April. 2012-2015 Regional Transportation Plan/Sustainable Communities Strategy: Towards a Sustainable Future.
- Southern California Edison. SCE – Company Overview.
<http://www.sce.com/AboutSCE/CompanyOverview/>.
- Southern California Gas Company. Profile. <http://www.socalgas.com/aboutus/profile.html>.
- Tse, Gary T. K. (Director). 2012, May 1. Letter. Los Angeles County Sheriff's Department Facilities Planning Bureau.
- United States Environmental Protection Agency (USEPA). Industrial Source Complex Short-Term Dispersion Model (ISCST3).
- US Forest Service (USFS). 2011, March 24. Angeles National Forest: About the Forest.
http://www.fs.usda.gov/wps/portal/fsinternet!/ut/p/c4/04_SB8K8xLLM9MSSzPy8xBz9CP0os3gjAwhwtDDw9_Al8zPwhQoY6BdkOyoCAPkATIA!/?ss=110501&navtype=BROWSEBYSUBJECT&cid=FSE_003840&navid=1700000000000000&pnavid=null&position=BROWSEBYSUBJECT&type=main&pname=Angeles%20National%20Forest-%20About%20the%20Forest.
- . 1995. *Landscape Aesthetics: A Handbook for Scenery Management*. Agriculture Handbook No. 701. Department of Agriculture. Washington, D.C.



13. Bibliography

http://www.fs.fed.us/cdt/carrying_capacity/landscape_aesthetics_handbook_701_no_append.pdf

.

———. 1974. *National Forest Landscape Management. Volume 2, Chapter 1. The Visual Management System*. Agriculture Handbook No. 462. Washington, D.C.

Verizon Communications, Inc. Verizon Fact Sheet.

<http://newscenter.verizon.com/kit/vcorp/factsheet.html>.

Western Regional Climate Center (WRCC). Western U.S. Climate Historical Summaries. [enter name of] Monitoring Station (ID No. 046816)]. <http://www.wrcc.dri.edu/summary/Climsmsca.html>.