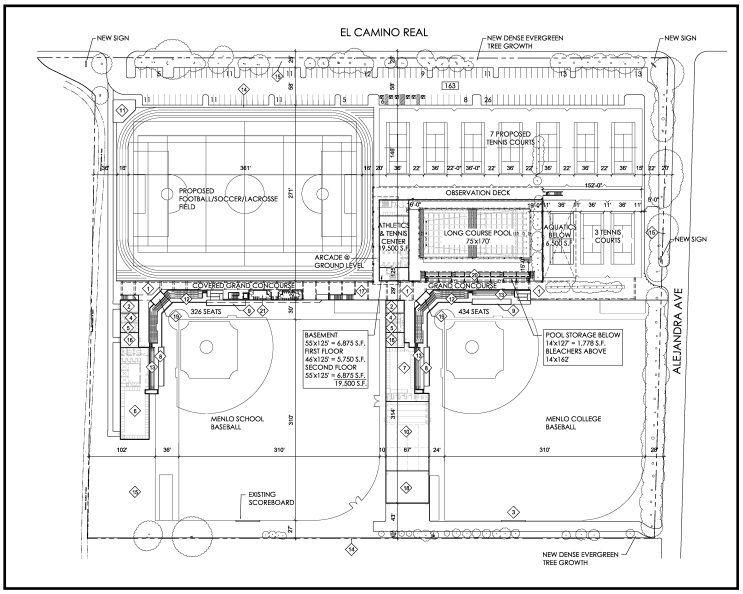
Draft Environmental Impact Report

SCH No. 2013012002



Town of Atherton
Planning Department
91 Ashfield Road
Atherton, CA 94027

September 2013

LAMPHIER - GREGORY
URBAN PLANNING, ENVIRONMENTAL ANALYSIS & PROJECT MANAGEMENT | 510.535.6690

CONTENTS

Page

Chapter 1: Introduction **1-1**
Purpose of the Environmental Impact Report 1-1
EIR Review Process 1-1
Content and Organization of the EIR 1-2

Chapter 2: Executive Summary and Impact Overview **2-1**
Summary Description 2-1
Summary of Impacts and Mitigation Measures 2-2
Significant and Unavoidable Impacts That Cannot be Mitigated to a Level of Less Than Significant 2-2
Impacts Reduced to a Level of Less Than Significant Through Mitigation 2-3
Alternatives 2-4

Chapter 3: Project Description **3-1**
Introduction 3-1
Project Site 3-1
Description of the Proposed Project 3-2
Project Objectives 3-10
Required Approvals 3-10

Chapter 4: Aesthetics **4-1**
Introduction 4-1
Environmental Setting 4-1
Regulatory Setting 4-2
Impacts and Mitigation Measures 4-3
Scenic Vista 4-4
Visual Character 4-4
Scenic Highways and Corridors 4-16
Light and Glare 4-16
Cumulative Aesthetic Impacts 4-16

Chapter 5: Air Quality **5-1**
Introduction 5-1
Setting 5-1
Impacts and Mitigation Measures 5-8
Conflict with Air Quality Plan 5-9
Air Quality Standards 5-9
Exposure of Sensitive Receptors to Substantial Pollution Concentrations 5-12
Odors 5-13
Cumulative Impacts 5-13

Page

Chapter 6: Biological Resources 6-1
Introduction 6-1
Environmental Setting 6-1
Regulatory Setting 6-3
Impacts and Mitigation Measures 6-6
Common Plant Communities / Wildlife Habitat 6-7
Special-Status Species and Habitat 6-7
Wetlands / Riparian Habitat 6-8
Wildlife Corridors 6-8
Plan and Policy Conflicts 6-8

Chapter 7: Cultural Resources 7-1
Introduction 7-1
Environmental Setting 7-1
Regulatory Setting 7-6
Impacts and Mitigation Measures 7-7
Disturbance of Historical Resources 7-7
Archaeological Resources, Geologic/Paleontological Features 7-10
Native American Human Remains 7-12

Chapter 8: Greenhouse Gas Emissions 8-1
Introduction 8-1
Environmental Setting 8-1
Regulatory Setting 8-5
Impacts and Mitigation Measures 8-8
Greenhouse Gas Emissions 8-8
Consistency with Greenhouse Gas Reduction Plans 8-10

Chapter 9: Noise 9-1
Introduction 9-1
Environmental Setting 9-3
Regulatory Setting 9-7
Impacts and Mitigation Measures 9-9
Project Generated Noise 9-10
Compatibility of Proposed Use with Ambient Noise Levels 9-17
Activity-Specific Noise Levels at Adjacent Uses 9-18
Permanent Ambient Noise Increases at Adjacent Uses 9-21
Temporary Noise Increases at Adjacent Uses 9-22
Groundborne Noise and Vibration 9-24
Aircraft Noise 9-25
Cumulative Noise Impact 9-25

Chapter 10: Transportation and Circulation 10-1
Introduction 10-1
Known Concerns 10-1
Regulatory Setting 10-2
Environmental Setting 10-3
Impacts and Mitigation Measures 10-38
Existing with Project Intersection Impacts 10-39
Near Term Cumulative Year 2016 with Project Weekday PM Peak Hour Intersection Impacts 10-41

Page

Long Term Cumulative Year 2035 with Project Weekday PM Peak Hour Intersection Impacts 10-41
Vehicle Queuing Impacts 10-42
Bicycle and Pedestrian Impacts 10-43
Transit Impacts 10-44
Parking Discussion 10-44

Chapter 11: Other CEQA Considerations 11-1
Introduction 11-1
Mandatory Findings of Significance 11-1
Quality of the Environment 11-1
Cumulative Impacts 11-1
Adverse Effects on Human Beings 11-2
Significant and Irreversible Modification in the Environment 11-2
Growth Inducing Impacts 11-2

Chapter 12: Alternatives 12-1
Introduction 12-1
Project Objectives 12-1
Project Impacts 12-2
Alternatives Analysis 12-3
Selection of Alternatives 12-3
Alternative A: No Project Alternative 12-4
Alternative B: Project Without Cherry St. Affordable Housing Alternative 12-4
Alternative C: Reduced Density Alternative 12-7
Environmentally Superior Alternative 12-10

Chapter 13: Report Preparers 13-1
Report Preparers 13-1
City Contact 13-1

APPENDICES

(Appendices are included on a CD affixed inside the back cover of hard copies)

Appendix A: Notice of Preparation, Initial Study, and Comments Received
Appendix B: Air Quality Emissions Model & Construction Health Risk Results
Appendix C: Biological Resources Assessment and Preliminary Arborist Report
Appendix D: Cultural Resources Assessment
Appendix E: Traffic Data
Appendix F: Parking Study

TABLES

Page

2.1 Summary of Project Impacts and Mitigation Measures 2-7
3.1 Summary of Activity at Cartan Field 3-4
5.1 Health-Based Ambient Air Quality Standards 5-5
5.2 Summary of Criteria Air Pollution Monitoring Data 5-6
5.3 Regional Attainment Status 5-7
5.4 Average Daily Regional Air Pollutant Emissions, Construction 5-8
9.1 Representative Environmental Noise Levels 9-2
9.2 Long-Term Ambient Noise Measurements 9-5
9.3 Short-Term Ambient Noise Measurements 9-6
9.4 Town of Atherton's Noise Control Ordinance Sound Level Limits 9-8
9.5 Existing and Future Average Noise Level (Leq) During Activities 9-15
9.6 Existing and Future Average Annual Noise Level (CNEL), dBA 9-16
9.7 Existing and Future Average Annual Noise Level (CNEL), dBA 9-17
9.8: Average Noise Level (Leq, dBA) at the Residences to the North 9-20
9.9 Typical Construction Equipment Noise Levels 9-23
9.10 Vibration Levels for Construction Equipment at Various Distances 9-24
10.1 Signalized Intersection LOS Criteria 10-5
10.2 Unsignalized Intersection LOS Criteria 10-5
10.3 Intersection Level of Service Existing Weekday AM Peak Hour 10-15
10.4 Intersection Level of Service Existing Weekday PM Peak Hour 10-16
10.5 Intersection Level of Service Spring Saturday With College & High School Games 10-17
10.6 Intersection Level of Service Fall Saturday With College Football Game 10-17
10.7 Menlo School Changes in Parking Demand & Traffic Activity at Cartan Field 10-24
10.8 Menlo College Changes in Parking Demand & Traffic Activity at Cartan Field 10-25
10.9 Cumulative Project Development Expected by 2016 10-34
10.10 95th Percentile Vehicle Queuing El Camino Real Left Turn Lanes 10-42
12.1 Existing and Future Average Noise Level (Leq) during Activities with Alternative C 12-8
12.2 Typical Maximum Noise Level (Lmax) during Activities with Alternative C 12-9
12.3 Existing and Future with Alternative C Average Annual Noise Level (CNEL), dBA 12-9

FIGURES

Page

3.1 Regional Location 3-11
3.2 Project Site 3-13
3.3 Site Plan 3-15
3.4 Elevations, Aquatic, Field Sports and Tennis 3-17
3.5 Elevations, Menlo School Baseball, Football Complex 3-19
3.6 Elevations, Menlo College Baseball, Football Complex 3-21
3.7 Grading and Drainage Plan 3-23
3.8 Preliminary Landscaping Plan 3-25
4.1 Viewpoint Locations 4-5
4.2a Existing View from El Camino Real, looking southwest (Viewpoint 1) 4-7
4.2b Simulation from El Camino Real, looking southwest 4-7
4.3a Existing View from Alejandro Avenue, looking northeast (Viewpoint 2) 4-9
4.3b Simulation from Alejandro Avenue, looking northeast 4-9
4.4a Existing View from 4 Brittany Meadows 2nd Story Window, looking east (Viewpoint 3) 4-11
4.4b Simulation from 4 Brittany Meadows 2nd Story Window, looking east 4-11
4.5a Existing View from 35 Isabella Avenue 2nd Story Window, looking southeast (Viewpoint 4) 4-13
4.5b Simulation from 35 Isabella Avenue 2nd Story Window, looking southeast 4-13
9.1 Noise Measurement Locations 9-4
9.2 Long-Term Noise Measurement Results 9-5
9.3 Town of Atherton's Land Use Compatibility for Community Environments 9-7
9.4 Existing and Future Football/Soccer/Lacrosse Field Location 9-11
9.5 Location of Residential Lots Exposed to Significant Noise Impact and Recommended Noise Barrier Location 9-19
10.1 Area Map 10-7
10.2 Existing Lane Geometries and Intersection Control 10-8
10.3 Existing AM Commute Peak Hour Volumes 10-11
10.4 Existing PM Commute Peak Hour Volumes 10-12
10.5 Existing Saturday 11:00 AM – 12:00 Noon Volumes 10-13
10.6 Existing Fall Saturday 10:45 – 11:45 AM Peak Hour Volumes with Football 10-14
10.7 Existing Weekday AM Commute Period Pedestrian and Bicycle Volumes 10-19
10.8 Existing Weekday PM Commute Period Pedestrian and Bicycle Volumes 10-20
10.9 Existing Saturday 11:00 AM to 5:00 PM Pedestrian and Bicycle Volumes 10-21
10.10 Existing Fall Football Pedestrian and Bicycle Volumes 10-22
10.11 Project Increment Traffic Weekday PM Peak Hour Existing, 2016 and 2035 PM Peak Hour 10-26
10.12 Existing with Project Weekday PM Peak Hour Volumes 10-27
10.13 Year 2016 with Project Weekday PM Peak Hour Volumes 10-28
10.14 Year 2035 with Project Weekday PM Peak Hour Volumes 10-29
10.15 Project Traffic Increment Saturday Spring Baseball and Fall Football 10-30
10.16 Existing Spring Baseball with Project Saturday Peak Hour Volumes (11AM-Noon) 10-31
10.17 Existing with Project Fall Football Saturday Peak Hour Volumes (10:45-11:45 AM) 10-32
10.18 Year 2016 Weekday without Project PM Peak Hour Volumes 10-36
10.19 Year 2035 Weekday without Project PM Peak Hour Volumes 10-37
12.1 Relocated Football Field Alternative Site Plan 12-5

This page intentionally left blank

1

INTRODUCTION

PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The California Environmental Quality Act and the California Environmental Quality Act Guidelines (together "CEQA") require an Environmental Impact Report (EIR) to be prepared for any project which may have a significant impact on the environment. An EIR is an informational document, the purposes of which, according to CEQA are "to provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment; to list ways in which the significant effects of such a project might be minimized; and to indicate alternatives to such a project." The information contained in this EIR is intended to be objective and impartial, and to enable the reader to arrive at an independent judgment regarding the significance of the impacts resulting from the proposed project.

This EIR evaluates the potential environmental impacts that may be associated with the proposed Cartan Field Upgrade Project ("Project") in the Town of Atherton, California. The applicant is Menlo College and Menlo School, represented for this Project by Kenneth Rodrigues & Partners, Inc. The Lead Agency is the Town of Atherton.

EIR REVIEW PROCESS

This EIR is intended to enable Town decision makers, public agencies and interested citizens to evaluate the broad environmental issues associated with the proposed Project. An EIR does not control the agency's ultimate discretion on the Project. As required under CEQA, the agency must respond to each significant effect identified in the EIR by making findings and if necessary and warranted, by adopting a statement of overriding considerations. In accordance with California law, the EIR must be certified before any action on the Project can be taken. However, EIR certification does not constitute Project approval.

Together, this Draft EIR (Draft EIR) and the subsequent Final EIR (Final EIR) will constitute the EIR for the Project. During the review period for this Draft EIR, interested individuals, organizations and agencies may offer their comments on its evaluation of Project impacts and alternatives. The comments received during this public review period will be compiled and presented together with responses to these comments in the Final EIR. Town of Atherton decision makers will review the EIR documents and will determine whether or not the EIR provides a full and adequate appraisal of the Project and its alternatives.

In reviewing the Draft EIR, readers should focus on the sufficiency of the document in identifying and analyzing the possible environmental impacts associated with the Project. Readers are also encouraged to review and comment on ways in which significant impacts associated with this Project might be avoided or mitigated. Comments are most helpful when they suggest additional specific alternatives or mitigation measures that would provide better ways to avoid or mitigate significant environmental

impacts. Reviewers should explain the basis for their comments and, whenever possible, should submit data or references in support of their comments.

This Draft EIR will be circulated for a 45-day public review period. Written comments may be submitted to the following address:

Town of Atherton
Lisa Costa Sanders, Deputy Town Planner
Planning Department
91 Ashfield Road
Atherton, CA 94027
650.752.0544 or lcostasanders@ci.atherton.ca.us

After reviewing the Draft EIR and the Final EIR and certifying the EIR as adequate and complete, the Atherton Planning Commission and City Council will be in a position to consider approval, denial, or modification of the Project and related actions.

CONTENT AND ORGANIZATION OF THE EIR

A Notice of Preparation (NOP) was issued in January 2013 to solicit comments from public agencies and the public regarding the scope of the environmental evaluation for the Project (see Appendix A). The NOP and all written responses, as well as the Initial Study are presented in Appendix A. The comments were taken into consideration during Draft EIR preparation.

Pursuant to CEQA, the Initial Study (Appendix A) prepared for the Project identified effects determined not to be significant and, in doing so, focused the EIR on the effects determined to be potentially significant. Project-related impacts to the following CEQA topics were determined not to be significant and no additional analysis is included in this Draft EIR: Agricultural and Forest Resources, Geology/Soils, Hazards/Hazardous Materials, Hydrology/Water Quality, Land Use/Planning, Mineral Resources, Population/Housing, Public Services, Recreation, and Utilities/Service Systems. For analysis of these topics, please refer to the Initial Study included in Appendix A.

As reflected in the content of this Draft EIR, the following CEQA topics were determined to have impacts that were potentially significant and, thus, required further analysis in this Draft EIR: Aesthetics, Air Quality, Biological Resources, Cultural Resources, Greenhouse Gas Emissions, Noise, and Transportation and Circulation.

An Executive Summary follows this introduction as Chapter 2. This summary presents an overview of the Project and the environmental impacts which may be associated with the Project, including a listing of recommended mitigation measures, where appropriate. The full description of the Project is included in Chapter 3. Chapters 4 through 10 present environmental analysis of the Project, focusing on the following issues:

4. Aesthetics
5. Air Quality
6. Biological Resources
7. Cultural Resources
8. Greenhouse Gas Emissions
9. Noise
10. Traffic/Transportation

Chapter 11 presents other CEQA considerations, including a discussion of significant and irreversible modifications in the environment, growth inducing impacts, and cumulative impacts.

Chapter 12 presents an evaluation of alternatives to the Project and comparison of the environmental effects which may be associated with each.

Chapter 13 lists the persons who prepared the Draft EIR.

This page intentionally left blank

2

EXECUTIVE SUMMARY AND IMPACT OVERVIEW

SUMMARY DESCRIPTION

This EIR evaluates the potential environmental impacts that may be associated with the proposed Cartan Field Upgrade Project ("Project") in the Town of Atherton, California. The applicant is Menlo College and Menlo School, represented for this Project by Kenneth Rodrigues & Partners, Inc. The Lead Agency is the Town of Atherton.

The Project site is currently fully developed as athletic fields for Menlo College ("College") and Menlo School ("School"), the main campuses of which are located across Alejandra Avenue to the south of the Project site. The Project site is bordered by a screening row of trees on the west, east and south and by the wooded concrete lined creek channel on the north.

The Project site is bordered to the north and west by single family residences in the Town of Atherton.

El Camino Real marks the boundary of Atherton and Menlo Park at this location. Across El Camino Real to the east from the site are commercial buildings and apartments in Menlo Park. A predominately single family residential neighborhood stretches farther to the east in Menlo Park.

Menlo College and Menlo School jointly are proposing to completely reconstruct Cartan Field. All of the existing uses and fields will be completely demolished and rebuilt with state-of the-art designs. Notable changes encompassed by the Project include:

- The addition of a pool so that the School no longer needs to share the College's pool on the main campus
- New buildings to house batting cages (currently outdoor), bathroom facilities (currently portables), conveniently located storage and locker rooms, and support functions such as coaches offices, referee room, training, etc.
- Permanent bleacher structures that meet applicable school and college requirements for competition fields
- Removal of the College garbage facilities (which will be handled on the main campus)
- Reorientation of the parking lot and increase in the number of parking stalls
- A smaller running track that would no longer meet size requirements for official meets
- An increase in the number of tennis courts
- Pedestrian enhancements including a grand concourse running North/South, a connection to the new lot on the east of the site, and a raised observation deck adjacent to some of the tennis courts
- Addition of a vegetated stormwater bioretention treatment basin to capture and treat run-off from the site

Note that the intent of this Project is to upgrade the sports facilities at Cartan Field to better serve existing athletic programs of the College and School and is not proposed to add additional sports programs nor is it tied to increased enrollment. While some increase of activity has been assumed because the upgraded facilities are likely to be a bigger draw to participants and spectators, the changes are limited as they will occur within the existing sports programs. Additionally, the upgrade would result in some activity shifting to Cartan Field from other locations on campus, including Gates Pool, Wunderlich Field, and Wunderlich Courts. The summer baseball program, which has not been run for the last few years, would return with the Project.

The existing 65 parking stalls will be moved from Alejandra Avenue to the El Camino Real frontage and expanded to a total of 168 stalls. Access will be provided by the existing driveway on Alejandra Avenue. A second access point will be added on El Camino Real for use only during large events. This new driveway will be a right-in and right-out access point. While the existing parking is considered adequate for the majority of activity at the site, some spectators arriving for large events currently park in other lots on the College or School campuses.

Pedestrian access from the College and School will continue from the existing location on Alejandra Avenue, which connects with walkways linking pedestrians from the College and School as well as to overflow parking. A new "grand concourse" running north/south will connect pedestrians to all of the activities at Cartan. An additional pedestrian connection will be located in the east/west direction connecting the new parking area to the fields and the grand concourse.

As part of the Project, a Noise Ordinance amendment is proposed that would add the following section to the Noise Ordinance to address existing and future noise levels from athletic activities that can exceed basic sound level limits:

> *Section 8.16.050.H Cartan Field. The noise from athletic activities at Cartan Field may periodically exceed the basic noise regulations between the hours of nine a.m. to seven p.m. weekdays and Saturdays, and ten a.m. to six p.m. Sundays, provided that noise levels shall not exceed seventy-five dBA when measured at any adjacent residential property. Vuvuzelas shall be prohibited at all times.*

In addition to the Noise Ordinance amendment described above, approval of the Project will require Planning Department review for Zoning Ordinance standards compliance from the Town of Atherton. Because the original use pre-dated Use Permit requirements, approval of a Use Permit will also be required. Additionally, appropriate clearance through Caltrans is required for the new access point on El Camino Real and construction activities will require appropriate administrative permits including a Stormwater Pollution Prevention Plan.

SUMMARY OF IMPACTS AND MITIGATION MEASURES

The analyses in Chapters 4 through 10 of this document provide a description of the existing setting, potential impacts of Project implementation, and recommended mitigation measures to reduce or avoid potentially significant impacts that could occur as a result of Project implementation. **Table 2.1** at the end of this chapter lists a summary statement of each impact and corresponding mitigation measure(s), as well as the level of significance after mitigation.

SIGNIFICANT AND UNAVOIDABLE IMPACTS THAT CANNOT BE MITIGATED TO A LEVEL OF LESS THAN SIGNIFICANT

The following significant and unavoidable impacts have been identified. These impacts would remain significant even with identified mitigation.

Cultural Resources: The Project includes demolition of Perry Stable, which is considered a historic resource due to its connection with the racehorse Phar Lap and his contentious death. Though a memorial would be created (Mitigation Measure Cultural-1), the memorial itself would not qualify as a historic resource, but only a commemoration. Therefore, even with mitigation, the Project's impact relating to loss of a historic resource would remain significant and unavoidable.

Noise: The Project would result in noticeably increased noise levels from the football/soccer/ lacrosse field at three residential properties at the northern boundary of the Project site due to the field and grandstands moving closer to these properties with the Project. With implementation of a noise barrier (Mitigation Measure Noise-2a), appropriately designed PA system (Mitigation Measure Noise-2b), and constrained grandstand seating during smaller events (Mitigation Measure Noise-2c), the noise increase would be reduced somewhat, but would remain significant and unavoidable.

Note that alternatives have been identified that could avoid both these significant impacts. These are summarized under the Alternatives header below and discussed in detail in Chapter 12.

IMPACTS REDUCED TO A LEVEL OF LESS THAN SIGNIFICANT THROUGH MITIGATION

The following potentially significant impacts would be reduced to less than significant levels with implementation of mitigation measures:

Air Quality: Construction of the Project would result in temporary emissions of dust and construction vehicle emissions which would contribute to regional emissions. With implementation of construction best management practices (Mitigation Measures Air-1), construction-period air quality impacts would be reduced to a level of less than significant.

Biological Resources: Construction activities could adversely affect nesting birds protected by the Migratory Bird Treaty Act and/or Fish and Game Code of California. With implementation of a pre-construction survey if construction occurs during nesting season, and implementation of avoidance procedures if appropriate (Mitigation Measures Bio-1), the impact would be reduced to less than significant. Note that while not a potentially significant environmental impact, recommendations to ensure the survival and health of boundary trees have been included as Mitigation Measure Bio-2.

Cultural Resources: Construction of the Project could disturb unidentified archeological or paleontological resources and/or human remains. Because of the proximity of the Project to an ancient watercourse, there is a low to moderate possibility that buried archaeological resources may be located during construction activities and the potential to uncover Native American human remains exists in locations throughout California. Core sampling (Mitigation Measure Cultural-2a) and construction crew training (Mitigation Measure Cultural-2b) will be performed by a qualified professional archaeologist. In the event previously unknown paleontological, historic or prehistoric resources, or human remains are discovered, work would be halted and the significance of the find and appropriation mitigation(s) determined (Mitigation Measures Cultural-2c and Cultural-3). These mitigation measures would reduce the impacts related to disturbance of previously unknown subsurface cultural resources to less than significant levels.

Traffic: The northbound El Camino Real left turn lanes serving Alejandra Avenue and Isabella Avenue would experience increased left and U-turns resulting in queues that could extend beyond available storage at both locations as spectators arrive for college football games. The impact would be mitigated to less than significant levels at both intersections through prohibiting right turn entry into the new Project driveway on El Camino Real and lengthening the left turn lane on the northbound El Camino Real approach to Alejandra Avenue (Mitigation Measure Traffic-5).

While the majority of the impact related to pedestrian and bicycle circulation would be beneficial or less than significant, a potentially significant impact could be exacerbated for pedestrians choosing to walk in the roadway instead of the southern sidewalk parallel to Alejandra Avenue between Wunderlich Field and Cartan Field. With the provision of new fencing or barrier landscaping as well as pedestrian wayfinding signage (Mitigation Measure Traffic-6), the impact to pedestrians would be reduced to less than significant.

All other impacts would be less than significant without the need for mitigation, as detailed in **Table 2.1**.

ALTERNATIVES

Three alternatives were evaluated, as follows:

Alternative A: No Project Alternative. Alternative A is a "no project" alternative. It assumes the proposed Project is not approved and the site would remain as it is today.

Alternative B: Perry Stable Retention Alternative. Alternative B assumes retention of the Perry Stable in its current location. The bioretention swale planned for that location would instead need to be accommodated elsewhere on the site or replaced with other adequate stormwater measures. This could result in reduction of some other building space, parking stalls and/or a tennis court.

Alternative C: Relocated Football Field Alternative. Alternative C locates the football / soccer / lacrosse field farther from the north property line to lower noise levels at the residences to the north. This alternative site plan swaps the location of the football field with that of the tennis courts and the aquatic center. This alternative also retains Perry Stable, as in Alternative B. Note that additional revisions were made to suit desired site usage, including expansion of the track to include a true turn and space for field event practice (shot put, long jump, etc.). With the expansion of the track, there are 2 less tennis courts and 29 less parking spaces proposed than under the Project (a total of 139).

Alternatives Conclusion

Alternative A, the No Project Alternative proposes only continuing use of the site with none of the changes currently proposed and therefore, would result in no environmental impacts. Alternative A would be the environmentally superior alternative.

The CEQA Guidelines also require that "if the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives" (CEQA Guidelines Section 15126.6(e)(2)). In general, the environmentally superior alternative minimizes adverse impacts to the environment, while still achieving the basic Project objectives.

Alternative C would be the next most environmentally superior alternative as both significant and unavoidable impacts of the Project (loss of a historic resource and noise increases over ordinance levels) would be avoided under Alternative C.

All Project impacts other than loss of a historic resource and noise increases at the northern residences are either less than significant or can be reduced to those levels through implementation of the mitigation contained in this Draft EIR. The assessment above focuses on these two impacts that are significant and unavoidable under the Project. All other impacts would be the same or similar under Alternatives B and C as compared to the Project and only marginally reduced for Alternative A and confined to reductions in already less than significant impacts.

This page intentionally left blank

Table 2.1: Summary of Project Impacts and Mitigation Measures

Potential Environmental Impacts	Recommended Mitigation Measures	Resulting Level of Significance
Significant and Unavoidable		
Impact Cultural-1: Removal of a Historic Resource, Perry Stable. The Perry Stable is a historic resource because of its association with the Australian racehorse Phar Lap and his contentious death at the property. The Project would demolish the Perry Stable, resulting in permanent removal of a historic resource. The impact would be significant and unavoidable.	Cultural-1: Phar Lap Memorial. The Project applicant shall fund creation of a memorial to Phar Lap at or near the area occupied by the Perry Stable. Such a memorial should be created with input from the Atherton Planning Department, the Atherton Heritage Association, and the Menlo College and Menlo School.	Significant and Unavoidable
Impact Noise-2: Activity-Specific Noise Level Increases. The proposed Project would result in noticeably increased noise levels from the football/soccer/lacrosse field at three residential properties at the northern boundary of the Project site. This is a significant impact. Noise increases for other activities and at other boundaries would be less than significant.	Noise-2a: Noise Barrier. A noise barrier shall be constructed along the north property line to reduce noise from the activities at the football/soccer/ lacrosse fields. This noise barrier shall be a wall reaching a height of at least 8 feet, as determined through coordination with the Town. While the increase in noise from the field would be effectively reduced, increased noise from the grandstands during games would not be reduced below significance levels and the impact would remain significant and unavoidable. Noise-2b: PA System Design. The PA systems shall be designed to minimize the 'spilling' of sound in the direction of the nearby homes with a goal of limiting the PA sound levels to 60 dBA at the residential property lines. Design characteristics can include but are not limited to the following: • Use "distributed" sound systems to reduce the overall sound power levels by covering the spectator area with many directional speakers at relatively low sound levels rather than a few wide dispersion speakers at high sound levels. • The speakers should be oriented away from the nearest residential property lines, as practical to create a directional system. Where typical outdoor sound systems place two or more speakers at one location, each oriented in different directions to cover more of the area, the Project PA systems should use additional speaker locations so that the orientation of the speakers can be consistently away from the nearest residences. • Minimize the PA coverage of the fields, since these speakers would tend to have the longest distances to cover and, therefore, have the highest sound levels. • When the grandstands are not full, turn off speakers that cover empty seating areas. • Locate the pool timing buzzer close to the swimmers and below the elevation of the adjacent grade. The noise from the pool area will generally be attenuated by the buildings and walls around the pool. This attenuation should be maximized	Significant and Unavoidable

Potential Environmental Impacts	Recommended Mitigation Measures	Resulting Level of Significance
	for the buzzer by locating it as close the pool level as possible. Noise-2c: Grandstand Seating Locations. Empty seats in the grandstands during games shall be grouped at the northern end, as practical. Because most events at the field will not fill the grandstands, reserving vacant seating at the northern end of the grandstands whenever possible would lessen the noise of cheering crowds at the residential properties to the north for all but the largest events.	
Less than Significant with Mitigation		
Impact Air-1: Construction Period Dust, Emissions and Odors. Construction of the Project would result in temporary emissions of dust, criteria air pollutants, and odors that may result in both nuisance and health impacts. Without appropriate measures to control these emissions, these impacts would be considered significant.	Air-1: Basic Construction Management Practices. The Project shall demonstrate proposed compliance with all applicable regulations and operating procedures prior to issuance of demolition, building or grading permits, including implementation of the following BAAQMD "Basic Construction Mitigation Measures". • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered. • All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. • All vehicle speeds on unpaved roads shall be limited to 15 mph. • All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. • Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. • Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.	Less than Significant

Potential Environmental Impacts	Recommended Mitigation Measures	Resulting Level of Significance
Impact Bio-1: Disturbance of Nesting Birds. Construction activities could adversely affect nesting birds protected by the Migratory Bird Treaty Act and/or Fish and Game Code of California. This is a potentially significant impact.	Bio-1: Pre-Construction Nesting Bird Survey. Within 15 days in advance of any tree removal or ground-disturbing activity that will commence during the breeding season (February 1 through August 31), a qualified wildlife biologist will conduct pre-construction surveys of all trees in the vicinity of the planned activity. If pre-construction surveys indicate that no nests of protected birds are present or that nests are inactive or potential habitat is unoccupied, no further action is required. If active nests of protected birds are found during a pre-construction survey, then avoidance procedures should be developed in consultation with the Department of Fish and Wildlife. Avoidance measures could include establishment of construction buffers (up to several hundred feet in the case of raptors), or seasonal avoidance. If buffers are established, a no disturbance zone should be enforced around active nests for the duration of the breeding season or until a qualified biologist determines that all young have fledged. Once the young have fledged, tree removal or construction activities within the buffer zone can resume. The size of the buffer zone should take into account baseline noise and human disturbance levels at the site, screening between the nest and the construction area, and sensitivity of the identified nesting species. Pre-construction surveys are not required for construction activities scheduled to occur during the non-breeding season (August 31 through January 31). Construction activities commencing during the non-breeding season and continuing into the breeding season do not require surveys (as it is assumed that any breeding birds taking up nests would be acclimated to project-related activities already under way). Nests initiated during construction activities would be presumed to be unaffected by the activity, and a buffer zone around such nests would not be necessary. However, a nest initiated during construction cannot be moved or altered.	Less than Significant
Impact Cultural-2: Disturbance of Unidentified Paleontological, Prehistoric or Historic Archaeological Resources. Because of the proximity of the project to an ancient watercourse, there is a low to moderate possibility that buried archaeological resources may be located during construction activities. Site preparation, grading, and construction activities could adversely impact previously undiscovered paleontological/ archeological resources. This is a potentially significant impact.	Cultural-2a: Core Sampling. Prior to grading or construction activities, the Project applicant shall engage a qualified professional archaeologist to conduct core sampling to determine the presence or absence of subsurface resources. Core sampling shall be limited to areas of proposed subsurface construction and should not exceed the proposed depths of subsurface disturbance that will result due to construction of building and bleacher footings or the pool excavation. Cultural-2b: Construction Crew Cultural Resource Training. Prior to the beginning of construction, the	Less than Significant

Potential Environmental Impacts	Recommended Mitigation Measures	Resulting Level of Significance
	applicant shall engage a qualified professional archaeologist to conduct a cultural resources training session for construction crew members. Information should be provided to construction personnel about the legal requirements relating to the discovery of buried cultural resources or buried human remains, as well as information useful in identifying historic and prehistoric cultural material, and the procedures to follow should cultural resources or buried human remains be encountered during project excavations. Cultural-2c: Construction Activity, Evaluate Find and Implement Mitigation. In accordance with CEQA Guideline §15064.5 (f), should any previously unknown paleontological, historic or prehistoric resources, including but not limited to charcoal, obsidian or chert flakes, grinding bowls, shell fragments, bone, pockets of dark, friable soils, glass, metal, ceramics, wood or similar debris, be discovered during core sampling, grading, trenching, or other on-site excavation(s), earthwork within 100 feet of these materials shall be stopped until a qualified professional archaeologist has an opportunity to evaluate the significance of the find and suggest appropriate mitigation(s), as determined necessary to protect the resource, as detailed below. (A) According to CEQA Section 15126.4 avoidance is the preferred mitigation. Since CEQA provisions regarding the preservation of historic sites direct that adverse effects to historic sites shall be avoided, if feasible, the resource shall be protected from damaging effects through avoidance. (B) Avoidance can include, but is not limited to, the following options: 1. Planning construction to avoid the historic site. 2. Incorporation of sites within parks, green space, or other open space. 3. Capping the historic site with a layer of chemically stable soil before construction. Capping the historic site would include installation of a water permeable protective barrier that is covered with a 3-ft.-thick layer of chemically stable soil before constructing non-intrusive facilities on the site. Excavation for landscaping, irrigation or any other purpose shall be limited to the soil layer above the water permeable protective barrier. If the soil layer cannot accommodate all planned underground utilities, a thicker soil layer may be used to cover the site. 4. Deeding the site into a permanent conservation easement. (C) If avoidance of any previously undiscovered site is not feasible, data recovery shall be conducted in accordance with an approved Archaeological	

Potential Environmental Impacts	Recommended Mitigation Measures	Resulting Level of Significance
	Data Recovery Plan (ADRP) to mitigate adverse effects to the significance of the site – the area of data recovery being limited to the area of adverse effect. This would fulfill CEQA requirements that the mitigation measure must be "roughly proportional" to the impacts of the project. Data recovery shall be conducted by a professional archaeologist in compliance with CEQA Guideline Section §15064.5. Once the site has been properly tested, subject to data recovery, or preserved to the satisfaction of the professional archaeologist in compliance with CEQA Guideline §15064.5, the site can be further developed.	
Impact Cultural-3: Disturbance of Unidentified Native American Human Remains. Although not anticipated, human remains may be identified during site-preparation and grading activities. The potential to disturb Native American remains is a potentially significant impact.	Cultural-3: Halt Construction Activity, Evaluate Remains and Take Appropriate Action in Coordination with Native American Heritage Commission. Section 7050.5(b) of the California Health and Safety code will be implemented in the event that human remains, or possible human remains, are located during Project-related construction excavation. Section 7050.5(b) states: In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code. The County Coroner, upon recognizing the remains as being of Native American origin, is responsible to contact the NAHC within 24 hours. The Commission has various powers and duties, including the appointment of a Most Likely Descendant (MLD) to the Project. The MLD, or in lieu of the MLD, the NAHC, has the responsibility to provide guidance as to the ultimate disposition of any Native American remains.	Less than Significant
Impact Traffic-5:Football Game Vehicle Queuing on El Camino Real at Alejandra Avenue and Isabella Avenue. The northbound El Camino Real left turn lanes serving Alejandra Avenue and Isabella Avenue would experience increased left and U-turns during the two hours before the start of a Menlo College football game. Existing	Traffic-5: Football Game Queuing Improvements. The following improvements shall be implemented at El Camino Real left turn lanes on the northbound approaches to both Isabella Avenue and Alejandra Avenue to address 95th Percentile queues on fall football Saturdays:	Less than Significant

Potential Environmental Impacts	Recommended Mitigation Measures	Resulting Level of Significance
queuing at these intersections is on the border or beyond available storage lengths and would extend beyond available storage at both locations as spectators arrive for college football games. 95th percentile queuing in El Camino Real northbound left turn lanes at Isabella Avenue and Alejandra Avenue during pre-game inbound traffic flow on a football Saturday would be a significant impact.	<u>El Camino Real/Isabella Avenue</u> Eliminate right turn entry from southbound El Camino Real into the new Cartan Field parking lot. Maintain right turn exit from the lot to southbound El Camino Real to facilitate post-game outbound flow from the parking area and to allow pre-game traffic entering from Alejandra Avenue an easy exit if the Cartan Field parking lot is full. <u>El Camino Real/Alejandra Avenue</u> Lengthen the left turn lane on the northbound El Camino Real approach to Alejandra Avenue. This can be provided within the landscaped median just south of the intersection. Assuming prohibition of right turns from southbound El Camino Real into the Cartan Field parking lot as specified above, the left turn lane on the northbound El Camino Real approach to Alejandra Avenue would need to be lengthened from 90 up to at least 150 feet.	
Impact Traffic-6:Pedestrian and Bicycle Circulation. While the upgraded facility could be a greater draw to participants and spectators, with the addition of the pool and additional parking at Cartan Field, the anticipated number of pedestrians and bicycles crossing roadways would be anticipated to be the same or reduced. Additionally, on-site pedestrian circulation would be improved. While the majority of the impact related to pedestrian and bicycle circulation would be beneficial or less than significant, a potentially significant impact could be exacerbated for pedestrians choosing to walk in the roadway instead of the southern sidewalk parallel to Alejandra Avenue between Wunderlich Field and Cartan Field.	Traffic-6: Wayfinding and Sidewalk/Street Barrier Enhancements. Provide new fencing or barrier landscaping as well as signage at the Wunderlich Field driveway connection to Alejandra Avenue to direct pedestrians destined for Cartan Field to use the sidewalk on the south side of the street to access the formal crosswalk just west of the Cartan Field parking lot entrance. The School and College shall monitor the success of the implemented mitigation and, if required, provide additional measures to eliminate pedestrian use of Alejandra Avenue as a walkway between the entrances to Cartan Field and Wunderlich Field.	Less than Significant
Less than Significant Impacts		
Impact Visual-1: Changed Visual Character. The proposed Project would change certain views of the site while retaining the same general character as an athletic facility. These changes would not constitute a substantial degradation of the existing character or quality of the site and its surroundings. This impact would be less than significant.	No mitigation warranted.	Less than Significant
Impact Visual-2: Scenic Corridor. All roadways and highways are considered to be scenic corridors in the Atherton General Plan. However, this is not an official state scenic highway designation and this local designation does not carry additional regulations. Additionally, the Project proposes retention of the majority of screening trees along the boundary roadways, limiting the potential change to views toward the site. Further, through substantial conformance with the applicable Town design standards and	No mitigation warranted.	Less than Significant

Potential Environmental Impacts	Recommended Mitigation Measures	Resulting Level of Significance
guidelines, any potential impact on this local scenic corridor would be ensured to be less than significant.		
Impact Visual-3: Increased Light and Glare. The Project would continue to operate during the daytime only, with no flood lighting for the sports fields proposed. Some increase in the amount of lighting on the site could occur with increased safety lighting on buildings, walkways and parking areas. Lighting quality, intensity and design is required to meet Town standards to minimize glare, light trespass and "sky glow" and would be required to be within allowable levels at adjacent residential property lines. With adherence to applicable regulations and policies, impacts related to light and glare would be less than significant.	No mitigation warranted.	Less than Significant
Impact Air-2: Operational Emissions. The Project would result in increased emissions from additional vehicles traveling to the site. However, the Project is below applicable threshold levels and the impact would be considered less than significant.	No mitigation warranted.	Less than Significant
Impact Air-3: Construction Period Exposure of Sensitive Receptors. Construction activities would expose nearby sensitive receptors to toxic air contaminants during the construction period, but the maximum exposure risk would be below the thresholds of significance under BAAQMD criteria for cancer, chronic hazard, and PM2.5 exposure. This would be a less than significant impact.	No mitigation warranted.	Less than Significant
Impact Bio-2: Removal of Trees. Construction of the Project as proposed would necessitate removal of mature trees on the site. However, these trees are not protected under the Town of Atherton municipal code and are not otherwise special-status. This is a less than significant impact.	The following mitigation is not necessary to reduce a potentially significant impact, but will further reduce an already less than significant impact and help ensure the survival of boundary screening trees. Bio-2: Tree Preservation. The Project will comply with Tree Preservation Guidelines as outlined in the Arborist Report and excerpted as follows: The goal of tree preservation is not merely tree survival during development but maintenance of tree health and beauty for many years. Trees retained on sites that are either subject to extensive injury during construction or are inadequately maintained become a liability rather than an asset. The response of individual trees will depend on the amount of excavation and grading, the care with which demolition is undertaken, and the construction methods. The following recommendations will help reduce impacts to trees from development and maintain and improve their health and vitality through the clearing, grading and construction phases. <u>Design Recommendations</u>	Less than Significant

Potential Environmental Impacts	Recommended Mitigation Measures	Resulting Level of Significance
	1. Establish vertical and horizontal elevations of all trees identified for preservation and plot trees on all plans. Forward these to the Project Arborist to review impacts to trees. 2. Any changes to the plans affecting the trees shall be reviewed by the Project Arborist with regard to tree impacts. These include, but are not limited to, demolition plans, utility and drainage plans, grading plans, and landscape and irrigation plans. 3. Tree Preservation Guidelines, prepared by the Project Arborist, should be included on all plans. 4. Design parking area and drive aisle to minimize impacts to tree roots. Where possible, shift planting peninsulas to be adjacent to mature trees to increase rooting area and minimize root loss. 5. A Tree Protection Zone shall be established around each tree to be preserved. For design purposes the Tree Protection Zone shall extend to the tree's dripline or, where hardscape encroaches on the Tree Protection Zone, to the edge of proposed hardscape location. 6. Significant vertical elevation changes (anything greater than 4") within the Tree Protection Zone can be damaging to trees. To minimize root damage, consider alternative construction methods for installing hardscape such as suspended slab, reduced curb, etc. 7. No trenching, excavation, construction or storage of materials shall occur within the Tree Protection Zone. No underground services including utilities, sub-drains, water or sewer shall be placed in the Tree Protection Zone. Spoil from trench, footing, utility or other excavation shall not be placed within the Tree Protection Zone, either temporarily or permanently. 8. Irrigation systems must be designed so that no trenching will occur within the Tree Protection Zone. 9. Any herbicides placed under paving materials must be safe for use around trees and be labeled for that use. 10. As trees withdraw water from the soil, expansive soils may shrink within the root area. Therefore, foundations, footings and pavements on expansive soils near trees should be designed to withstand differential displacement. 11. Do not apply lime to soil for construction purposed within 50' of the driplines of trees. Lime is toxic to tree roots. <u>Pre-Construction Treatments and Recommendations</u> 1. The construction superintendent shall meet with	

Potential Environmental Impacts	Recommended Mitigation Measures	Resulting Level of Significance
	the Project Arborist retained for construction monitoring before any work begins, including demolition, to discuss work procedures and tree protection. 2. Fence all trees to be retained to completely enclose the Tree Protection Zone prior to demolition, grubbing or grading. Fences shall be 6' high chain link, mounted to steel posts firmly driven into the ground or on stanchions fastened securely with rebar staples 12" deep, as required by the Town of Atherton. Fences are to remain until all grading and construction is completed. 3. Irrigate coast redwoods identified for preservation along El Camino Real and Alejandra Ave. before, during, and after construction to promote root regeneration and minimize decline in tree condition. The goal of irrigation is to wet the top 24"-36" of soil within the Tree Protection Zone, allowing it to dry in between irrigations. Irrigate trees every two to three weeks until the rainy season begins. 4. Trees identified for preservation may require pruning to provide construction clearance. All pruning shall be completed by a Certified Arborist or Tree Worker and adhere to the latest edition of the ANSI Z133 and A300 standards as well as the Best Management Practices -- Tree Pruning published by the International Society of Arboriculture. 5. Trees to be removed shall be felled so they fall away from the Tree Protection Zone and avoid pulling and breaking roots of trees to remain. If roots are entwined, the Project Arborist may first require severing the major woody root mass before extracting the trees or grinding the stump below ground. 6. Any work within the Tree Protection Zone shall use the smallest equipment possible and operate from outside the Tree Protection Zone. The Project Arborist should monitor all operations expected to encounter roots within the Tree Protection Zone. 7. Prior to excavation for underground foundations/footings/walls, trees may require root pruning outside the Tree Protection Zone by cutting all roots cleanly to the depth of the excavation. Roots shall be cut by manually digging a trench and cutting exposed roots with a sharp saw or other approved root pruning equipment. The Project Arborist will identify where root pruning is required and monitor all root pruning activities. <u>Recommendations for Tree Protection During Construction</u> 1. Prior to beginning work, the contractors working	

Potential Environmental Impacts	Recommended Mitigation Measures	Resulting Level of Significance
	in the vicinity of trees to be preserved are should meet with the Project Arborist at the site to review all work procedures, access routes, storage areas, and tree protection measures. 2. No grading, construction, demolition or other work shall occur within the Tree Protection Zone. Any modifications must be approved and monitored by the Project Arborist. 3. Demolition, grading and construction near mature trees shall be done carefully to avoid tearing tree roots in the process. Removal of soil around roots in the Tree Protection Zone should be performed by hand. Roots that extend into proposed development should be pruned clean and square at undamaged tissue. 4. If injury should occur to any tree during construction, it should be evaluated as soon as possible by the Project Arborist so that appropriate treatments can be applied. 5. Fences are to remain until all site work has been completed. Fences may not be relocated or removed without prior review and approval by the Project Arborist. 6. No excess soil, chemicals, debris, equipment or other materials shall be dumped or stored within the Tree Protection Zone. 7. Any additional tree pruning needed for clearance during construction must be performed by a Certified Arborist and not by construction personnel. <u>Maintenance of Impacted Trees</u> Trees preserved at the Cartan Field site will experience physical environment different from that pre-development. As a result, tree health and structural stability should be monitored. Occasional pruning, fertilization, mulch, pest management, replanting and irrigation may be required. In addition, provisions for monitoring both tree health and structural stability following construction must be made a priority. As trees age, the likelihood of branches or entire trees failing will increase. Therefore, annual inspection for hazard potential is recommended.	
Impact GHG-1: Increased GHG Emissions. Construction and operation of the proposed Project would be additional sources of GHG emissions, primarily through consumption of fuel for transportation and energy usage on an ongoing basis. However, additional emissions due to the Project are below threshold levels and are therefore considered a less than significant impact.	No mitigation warranted.	Less than Significant
Impact Noise-1: Noise and Land Use Compatibility. The Project site is exposed to exterior noise levels considered "conditionally	No mitigation warranted.	Less than Significant

Potential Environmental Impacts	Recommended Mitigation Measures	Resulting Level of Significance
acceptable" by the Atherton General Plan. Because the uses proposed are active and the nature of use at the site will not change with the Project, the impact of ambient noise levels on the proposed use is less than significant.		
Impact Noise-3: Ambient Noise Level Increases. The proposed Project would not cause a substantial permanent increase in ambient noise levels in the Project vicinity above levels without the Project. This is a less than significant impact.	No mitigation warranted.	Less than Significant
Impact Noise-4: Construction-Period Noise. Construction activities will create audible noise at the Project site and adjacent properties. However, construction noise is temporary and the construction hours will conform to the Town's Noise Ordinance. This is a less than significant impact.	No mitigation warranted.	Less than Significant
Impact Traffic-1:Existing Intersection Operation. While largely the same as the existing use, the proposed Project would result in some increases in vehicle trips to the area due to assumed increases in participation and spectators for the sports activities. However, the increased weekday PM Peak Hour traffic would not degrade operation of any analyzed intersection below acceptable level of service standards, contribute significantly to intersections already operating below acceptable level of service standards, or trigger any signal warrant criteria levels for unsignalized intersections. Existing level of service and signal warrant impacts would be less than significant.	No mitigation warranted.	Less than Significant
Impact Traffic-2:Saturday Intersection Operation. The proposed Project would result in some increases in vehicle trips to the area due to assumed increases in participation and spectators for the sports activities, which can occur on Saturdays. However, this increased Saturday traffic would not degrade operation of any analyzed intersection below acceptable level of service standards, contribute significantly to intersections already operating below acceptable level of service standards, or trigger any signal warrant criteria levels for unsignalized intersections. Impacts related to Saturday levels of service and signal warrants would be less than significant.	No mitigation warranted.	Less than Significant
Impact Traffic-3:Near-Term Intersection Operation. The proposed Project would result in some increases in weekday PM commute Peak Hour vehicle trips to the area due to assumed increases in participation and spectators for the sports activities that would be added to other near-term traffic increases in the area. However, increased weekday PM Peak Hour Project traffic would not degrade operation of any analyzed intersection below acceptable level of service	No mitigation warranted.	Less than Significant

Potential Environmental Impacts	Recommended Mitigation Measures	Resulting Level of Significance
standards, contribute significantly to intersections already operating below acceptable level of service standards, or trigger any signal warrant criteria levels for unsignalized intersections under near-term cumulative conditions. Near-term level of service and signal warrant impacts would be less than significant.		
Impact Traffic-4:Long Term Intersection Operation. The proposed Project would result in some increases in weekday PM commute Peak Hour vehicle trips to the area due to assumed increases in participation and spectators for the sports activities that would be added to other long-term traffic increases in the area. However, increased weekday PM Peak Hour Project traffic would not degrade operation of any analyzed intersection below acceptable level of service standards, contribute significantly to intersections already operating below acceptable level of service standards, or trigger any signal warrant criteria levels for unsignalized intersections under long-term cumulative conditions. Long-term level of service and signal warrant impacts would be less than significant.	No mitigation warranted.	Less than Significant
Impact Traffic-7:Transit Use. The proposed Project would not be expected to result in any significant change in transit ridership to or from the field. Transit impacts would be less than significant.	No mitigation warranted.	Less than Significant

3

PROJECT DESCRIPTION

INTRODUCTION

This chapter describes the Project location, existing uses, details of the proposed Project, Project objectives, and intended uses of the EIR.

PROJECT SITE

LOCATION AND EXISTING USES

The Project site is approximately 15 acres located at the western corner of El Camino Real and Alejandra Avenue. The regional location is shown in **Figure 3.1** and the specific location on this site is shown on **Figure 3.2**.

Note that to simplify discussion in this document, El Camino Real is considered to run north/south and other directions are simplified along that orientation. El Camino Real is considered to be the Project site's eastern border. (**Figure 3.3** shows "Reference North" as used in this document as well as True North.)

The Project site is currently fully developed as athletic fields for Menlo College ("College") and Menlo School ("School"), the main campuses of which are located across Alejandra Avenue to the south of the Project site. The Project site is bordered by a screening row of trees on the west, east and south and by the wooded concrete lined creek channel on the north.

The western portion of the site is currently used as access for and garbage storage for Menlo College.

GENERAL PLAN DESIGNATION AND ZONING

Though adjacent to residential neighborhoods, both the General Plan designation and zoning for the site are Public Facilities and Schools (PFS). The PFS General Plan designation and zoning apply to three private schools, five public schools and the Town Center.

The General Plan notes that Master Plans are requested to be submitted for private schools and that Conditional Use Permits consistent with those plans would be required for new or relocated facilities.

The most recent update to the Menlo College Master Plan was submitted to the Town in 2010. The proposed Project is generally consistent with this Master Plan. The Master Plan is silent on specifics of any changes to Cartan Field, though notes ongoing efforts to physically separate College and School facilities. The proposed parking at Cartan Field is greater than that assumed at this location under the 2010 update.

The most recent update to the Menlo School Master Plan was submitted to the Town in April 2012. The proposed Project is generally consistent with this Master Plan. The Master Plan includes a schematic drawing on page 12 depicting potential land uses for Cartan Field. It shows retention of the two baseball fields in the location they are today and rectangles outlining areas for a multi-use field, bleachers and parking in the northeastern portion of the site and aquatic, tennis, parking in the southeastern portion of the site. The uses proposed, while more detailed, are consistent with this schematic.

SURROUNDING LAND USES

The Project site is bordered to the north and west by single family residences in the Town of Atherton.

El Camino Real marks the boundary of Atherton and Menlo Park at this location. Across El Camino Real to the east from the site are commercial buildings and apartments in Menlo Park. A predominately single family residential neighborhood stretches farther to the east in Menlo Park.

The College and School main campuses are located across Alejandra Avenue to the south of the Project site (shown in **Figure 3.2**).

DESCRIPTION OF THE PROPOSED PROJECT

SUMMARY OF PROJECT CHANGES

Menlo College and Menlo School jointly are proposing to completely reconstruct Cartan Field. All of the existing uses and fields will be completely demolished and rebuilt with state-of the-art designs. The proposed site plan is shown in **Figure 3.3**. Elevations are shown on **Figures 3.4** through **3.6**. The Grading and Drainage Plan is included as **Figure 3.7** and the Landscaping Plan is included as **Figure 3.8**. All figures are included at the end of this chapter.

Notable changes encompassed by the Project include:

- The addition of a pool so that the School no longer needs to share the College's pool on the main campus
- New buildings to house batting cages (currently outdoor), bathroom facilities (currently portables), conveniently located storage and locker rooms, and support functions such as coaches offices, referee room, training, etc.
- Permanent bleacher structures that meet applicable school and college requirements for competition fields
- Removal of the College garbage facilities (which will be handled on the main campus)
- Reorientation of the parking lot and increase in the number of parking stalls
- A smaller running track that would no longer meet size requirements for official meets
- An increase in the number of tennis courts
- Pedestrian enhancements including a grand concourse running North/South, a connection to the new lot on the east of the site, and a raised observation deck adjacent to some of the tennis courts
- Addition of a vegetated stormwater bioretention treatment basin to capture and treat run-off from the site

Specific physical changes at Cartan Field are detailed by activity in the Proposed Uses section below.

Note that the intent of this Project is to upgrade the sports facilities at Cartan Field to better serve existing athletic programs of the College and School and is not proposed to add additional sports programs. While some increase of activity has been assumed because the upgraded facilities are likely to be a bigger draw to participants and spectators, the changes are limited as they will occur within the existing sports programs. Additionally, the upgrade would result in some activity shifting to Cartan Field from other locations on campus, including Gates Pool, Wunderlich Field, and Wunderlich Courts. Specifics of changes in activity are detailed in the Proposed Uses below.

Similarly, the proposed Project is not tied to increases in enrollment at the college or school. The School is currently operating at its maximum permitted enrollment of 795 students. Increasing the student cap would require approval from the Town of Atherton combined with appropriate environmental review, though the School has noted they have no plan to increase this student cap in the foreseeable future. The current enrollment at the College is 681. Factoring in enrollment trends, the College anticipates reaching their enrollment cap of 750 in 2015. As with the School, increasing the student cap for the College would require approval from the Town of Atherton combined with appropriate environmental review and is not proposed or anticipated at this time. These enrollment assumptions are the same whether or not the proposed Project moves forward.

NOISE ORDINANCE AMENDMENT

The Town of Atherton's Noise Control Ordinance (Chapter 8.16 of the Municipal Code) establishes a "basic noise regulation" as follows:

8.16.030 Basic noise regulation.

Except as otherwise permitted under this chapter, no person shall cause and no property owner shall permit on such owners' property, a noise produced by any person, machine, animal or device, or any combination thereof, in excess of the sound level limits set forth in this section to emanate from any property, public or private, beyond the property line. Any sound in excess of the sound level limits set forth in this section shall constitute a noise disturbance. For purposes of determining sound levels, sound level measurements shall be made at any location on the receiving property.

Sound Level Limits

7 a.m. to 10 p.m.	*60 dBA*
10 p.m. to 7 a.m.	*50 dBA*

A. In the event the alleged offensive noise contains a steady, audible tone, such as a whine, beating, pulsating, throbbing, or hum, the standards set forth in Section 8.16.030 shall be reduced by five dB.

B. In the event the ambient sound level equals or exceeds the sound level limit then the limit shall be five dBA over the ambient. (Ord. 509 § 1 (part), 1999)

Because noise from athletic activities can exceed these basic levels when sited near residential properties, an exception for little league activities at Holbrook-Palmer Park is already included in the Noise Ordinance as section 8.16.050.G.

As part of the Project, a Noise Ordinance amendment is proposed that would add the following section to the Noise Ordinance, similar to that included for Holbrook-Palmer Park:

> *Section 8.16.050.H Cartan Field. The noise from athletic activities at Cartan Field may periodically exceed the basic noise regulations between the hours of nine a.m. to seven p.m. weekdays and Saturdays, and ten a.m. to six p.m. Sundays, provided that noise levels shall not exceed seventy-five dBA when measured at any adjacent residential property. Vuvuzelas shall be prohibited at all times.*

SITE ACCESS

Vehicle Access and Parking

The existing 65 parking stalls will be moved from Alejandra Avenue to the El Camino Real frontage and expanded to a total of 168 stalls. Access will be provided by the existing driveway on Alejandra Avenue. A second access point will be added on El Camino Real for use only during large events. This new driveway will be a right-in and right-out access point. While the existing parking is considered adequate for the majority of activity at the site, some spectators arriving for large events currently park in other lots on the College or School campuses.

The existing service road running along the west property line will be shortened and will be used once or twice a week for trash pick-up from Cartan Field. The current trash being brought to Cartan Field from the College will be eliminated.

Pedestrian Access

Pedestrian access from the College and School will continue from the existing location on Alejandra Avenue, which connects with walkways linking pedestrians from the College and School as well as to overflow parking. A new “grand concourse” running north/south will connect pedestrians to all of the activities at Cartan. This walkway will be approximately 25 feet wide with landscaping, low pedestrian type lighting and high quality paving materials. An additional pedestrian connection will be located in the east/west direction connecting the new parking area to the fields and the grand concourse.

Pedestrian and roadway improvements are being considered along with this Project at a School driveway off Alejandro Avenue at Wunderlich Fields, just west of the Project site. These improvements are intended to better facilitate pedestrian movements from some areas of Menlo School to Cartan Field and would include repaving and removal of a sidewalk encumbrance (a wire bracing a utility pole) without changing the existing access.

PROPOSED USES

Proposed uses at Cartan Field are summarized in **Table 3.1** and described in more detail by activity following the table.

Table 3.1: Summary of Activity at Cartan Field

Activity	Current Participants	Increase in Participants	Increase in Spectator Vehicles	Time of Year	Amount
Activities Moved From Gates Pool to Cartan Aquatic Center					
HS Boys Water Polo Practice	42			Fall	M-F (5pm – 7pm) 14 weeks and 5 Saturdays 9 am to 11 am
HS Girls Water Polo Practice	11	13		Fall	14 weeks (70 weekdays) 3pm – 6pm and 5 Saturdays 11am to 1pm
HS F/S Water Polo Games	16	12	2	Fall	12 weekday afternoons 5-7pm.
HS Varsity Water Polo Games	28	2	2	Fall	8 weekdays 3 to 5 pm. 2 Sat tournaments 9am – 5pm, 2 Sat games 11am – 1pm.
HS Swim Practice	50	10		Spring	14 weeks (70 weekdays) 3 – 6pm. 4 Sat.s 9am to 11am.
HS Swim Meets	60	20	8	Spring	4 weekday 3 – 6pm. 1 Sat 9am to 2pm.
Activities Moved From Wunderlich Courts to Cartan Courts					
Bill Shine Tennis Clinics	6-8			summer	M-F 9am to 1pm, 10 weeks
Saturday Tennis Clinics	6-8	4		fall / winter / spring	Sat 9am to 5pm, 40 weeks/year. (Extended end time moved from 2pm)
HS Tennis Practice	17	17		fall / spring	M-F 3pm to 6pm, 28 weeks. (Note currently occur at either Wunderlich or Cartan but would move solely to Cartan.)
HS Tennis Matches	20		1	fall / spring	32 weekdays 3pm to 6pm. (Note currently occur at either Wunderlich or Cartan but would move solely to Cartan.)
Activities Moved from Wunderlich Field to Cartan Field					
HS F/S Soccer Games	40		2	Winter	11 weekdays 4 – 6pm. 5 Sat.s 12-3pm.
HS Varsity Soccer Games	40		2	Winter	11 weekdays 3-6pm. 5 Saturdays 11-1pm.
HS Soccer Practice	40			Winter	Weekdays 3- 6pm, 15 weeks. 2 Saturdays 11am to 1pm. Would occur on Wunderlich when conflict at Cartan.
College Men's Soccer Practice	25			fall / spring	24 weeks. Will move from 2pm to 4pm to 10am to 12pm, weekdays.11-Would occur on Wunderlich when conflict at Cartan.
College Men's Soccer Games	25		6	fall / spring	5-7 Saturdays, 11am to 4pm. 2 weekdays 4 to 6. Would occur on Wunderlich when conflict at Cartan.
College Women's Soccer Practice	25			fall / spring	24 weeks, 8am to 10am weekdays. Would occur on Wunderlich when conflict at Cartan.
College Women's Soccer Games	25		6	fall / spring	5-7 Saturdays, noon to 3pm. 2 weekdays 4 to 6. Would occur on Wunderlich when conflict at Cartan.
New Activities					
Summer Baseball Practice	0	20		summer	3 weekdays, 6 weeks in summer (18 weekdays) 4pm to 7pm.
Summer Baseball Games	0	20	10	summer	6 Sat games 11am-2pm.
Removed Activity					
HS Track Meet	150	-150	-75	spring	3 times per year weekdays 3pm to 5pm.
Activities in the Same Location, but Increase in Participants or Spectators					
HS Football Games	60	4	7	Fall	Weekdays 10 times per year, 3pm to 6pm
HS Football Practice	64	10		Fall	Weekdays for 15 weeks (75 days)

Activity	Current Participants	Increase in Participants	Increase in Spectator Vehicles	Time of Year	Amount
College Football Games	115		15	fall / spring	5 Saturdays 10am to 5pm
College Baseball Games	40		9	fall / spring	11-13 weekday games from 4pm to 7pm. 9-11 Saturday games from noon to 3pm
MS Baseball Games	26		2	spring	4 weekdays, 5pm to 7pm.
HS Varsity Lacrosse Games	40		3	spring	14 weekdays 4 to 6pm. 6 Saturdays noon to 2pm.
HS Baseball Games	40		3	spring	24 weekdays 3 to 6pm. 6 Saturdays 11am to 2pm.
HS F/S Lacrosse Games	40		2	spring	14 weekdays 5pm to 7pm. 6 Saturdays 2 to 4pm.
Activities with No Change					
MS 7th/8th Grade Baseball Practice	14			spring	M-F, 8 weeks, 1pm to 3pm.
HS Cross Country Practice	40			Fall	M-F, 10 weeks, 3pm to 6pm.
HS Track Practice	40			spring	M-F, 12 weeks, 3pm to 5pm.
MS 8th Grade Flag Football Practice	15			Fall	M-F, 10 weeks, 1pm to 3pm
HS Lacrosse Practice	50			spring	M-F, 15 weeks, 3pm to 6pm. 12 Saturdays 11am to 2pm.
HS Baseball Practice	40			spring	M-F, 15 weeks, 3pm to 6pm. 2 Saturdays, 10am to 1pm.
Knights Leadership Camp	50			summer	M-Th, 4 weeks, 5pm to 7pm.

Baseball

Physical Changes

The College and School baseball fields (two fields in total) will be rebuilt in the same locations that exist today. The College field will have new natural turf while the School will have a new artificial turf field installed. The new fields will meet college and high school design requirements, respectively. A new scoreboard will be located in right field for the college and will replace the existing one in centerfield.

New fixed seats and bleachers will be constructed on both fields. New brick walls along the grand concourse separate these seats from the pedestrian walkway. A total of approximately 430 seats will be located on the college field and approximately 320 seats will be located on the Menlo School field. New partially lowered dugouts will also be constructed on both fields. Speakers will be located in the brick wall at the rear of the seating areas, which requires lower noise levels than from speakers located farther from the spectators.

Both fields will have new fully enclosed locker rooms, public restrooms and storage facilities in new brick clad buildings. A common field maintenance building will be located between both fields to be shared by both users.

A fully enclosed soundproof batting cage will also be located between both fields. This building will house separate batting cages for the College and the School. The fully enclosed brick building replaces open caged facilities and is intended to mitigate noise from daily batting practice.

Changes in Activity

There will be no change in the school-year activities that will occur on the updated fields compared to the existing fields. While the seating will be increased, this is being done to meet college and high school standards. The existing capacity is adequate to meet seating demand and with no increase in activities, no substantial increase in spectators is anticipated. However, for a conservative analysis, we have assumed a 10% increase in spectator vehicles at games.

The only additional activity on the upgraded fields will be a Menlo School summer baseball program, which will run for 6 weeks during the summer, three weekdays of practice and Saturday games. This is an activity that was previously held at the field, but because it has not been held for a few years, its return is being considered a new activity for purposes of this analysis.

Track

Physical Changes

The existing standard size running track will be reduced in size and moved approximately 60 feet to the north. The two triple jump tracks currently near the northern boundary will be removed.

Changes in Activity

Three high school track meets are currently held at the track each spring, but these events would no longer occur on the proposed smaller track. This track would be used solely for practice and informal exercise -- uses which currently exist today.

Football / Soccer / Lacrosse

Physical Changes

A new artificial turf multi-use field will be constructed in the middle of the running track that can be used for football, soccer and lacrosse. This is a move of about 149 feet to the north for the field. Spectators currently occupy bleachers on the east and west of the field and, with the upgrades, will all be located in a raised grandstand over the grand concourse facing east. Seating will be located approximately 200 feet further north than under current conditions. Seating will be similar to the current capacity of approximately 1050 seats. A small new football storage building will be located at the northeast corner of the field/track.

A new scoreboard and speaker system will be installed similar to that for the baseball fields.

Changes in Activity

There will be no change in the activities that will occur on the updated field for football, though the School proposes an increase of 10 high school participants at practice and 4 participants at games due to the anticipated increased interest generated by the upgraded field. Popular college football games (such as Homecoming) can currently reach existing capacity and seating capacity is not proposed to substantially change. No substantial increase in spectators is anticipated for College or School football activities though 2 additional spectator vehicles are assumed for the parents of the additional participants at games. For a conservative analysis, we have also assumed a 10% increase in spectator vehicles at games.

Soccer activities for both the school and college will continue to be split between Cartan Field and Wunderlich Field; however, upon completion of the Project, the preference will switch to Cartan Field whenever available and Wunderlich Field will only be used for soccer when conflicting schedules

prevent the use of Cartan Field. This will result in the movement of much of the soccer practice and games activities from Wunderlich Field to Cartan Field. The existing seating capacity is adequate to meet spectator demand at events and with no increase in activities, no substantial increase in spectators is anticipated. However, for a conservative analysis, we have assumed a 10% increase in spectator vehicles at games.

There will be no change in the activities that will occur on the updated field for lacrosse. The existing seating capacity is adequate to meet spectator demand at events and with no increase in activities, no substantial increase in spectators is anticipated. However, for a conservative analysis, we have assumed a 10% increase in spectator vehicles at games.

Tennis

Physical Changes

A total of 10 tennis courts with modern surfacing will replace the existing 6 tennis courts, taking up generally the same location as the existing courts as well as expanding to the north along the proposed parking lot. A 12 foot high tennis observation walkway running along a portion of the courts will provide viewing of practice by coaches and games by spectators. The 10 courts will have 20 foot high perimeter fencing.

Changes in Activity

School tennis activities are currently split between the courts at Cartan and Wunderlich, but would move entirely to the courts at Cartan following the Project, leaving the Wunderlich courts for continuing College use. The School proposes an increase of 17 participants at tennis practice due to increased interest generated by the new courts with no change in the number of participants at matches. No substantial increase in spectators is anticipated at matches. For a conservative analysis, we have assumed a 10% increase in spectator vehicles at games.

The School's Saturday Tennis Clinic would also move wholly from the courts at Wunderlich to those at Cartan and would be expanded from 2pm to 5pm on Saturdays during the school year and increased by 4 participants due to the expected increased interest generated by the upgraded courts. There is no change in the hours or participants for the summer Bill Shine Tennis Clinic, though this use would also move wholly from the courts at Wunderlich to those at Cartan.

Aquatic Center

Physical Changes

The aquatics center will be depressed 14 feet below grade with a 12 foot high sound wall built at grade surrounding the entire center. Spectator seating of approximately 200 seats will be located with the highest seating just below ground level. An acoustical fabric structure will cover this seating area. A new 2-story brick building will be constructed on the north side of the center to house adult locker rooms and field locker rooms for boys' and girls' soccer and lacrosse, a trainers' room, offices, storage, physical conditioning space, pool equipment and public restrooms. Basement-level locker rooms for the aquatics center will be constructed under a tennis court to the south of the pool.

Changes in Activity

This is a new use proposed at Cartan Field. The current competition pool, Gates Pool, is located on the College campus and serves both the School and the College. The new facility at Cartan Field will be used strictly by the School and the existing pool will shift to use solely by the College.

School swim team practice and meets will both move and expand by 10 participants at practice and 20 participants at meets due to expected increase in interest generated by the new facility as well as correction of currently lower-than-average female participation. No substantial increase in spectators is anticipated for swim team activities, though 5 additional spectator vehicles are assumed for the parents of the additional participants at meets. For a conservative analysis, we have also assumed a 10% increase in spectator vehicles at games.

High School Boys' and Girls' Water Polo practice and Varsity and Freshman/Sophomore matches will all move to the new pool at Cartan with increases in the latter three of 13, 2 and 12 participants respectively due to expected increase in interest generated by the new facility as well as correction of currently lower-than-average female participation. No substantial increase in spectators is anticipated for Water Polo matches, though we have also assumed a 10% increase in spectator vehicles at games for a conservative analysis.

LIGHTING

The Project would continue to operate during the daytime only, with no flood lighting for the athletics fields proposed. The Project would include safety lighting on buildings, walkways and the parking area, as described below.

The new parking area will be lit by 16 foot high poles and fixture lights providing 1-2 footcandles of security lighting. This lighting will be "zero cut off" fixtures so that no light will leave Cartan Field and spill over to the surrounding properties. Pedestrian lighting will be 12 foot high pole and fixture lights located on all pedestrian walkways designed with the same criteria as the parking lot lighting. Aquatic center lighting will be a combination of underwater pool and deck top lights. Deck lighting will be designed as 12-16 foot high with zero cut off fixtures located on the pool deck. This design will contain all lighting within the aquatic center and not be visible from the surrounding streets. Building lighting will be recessed downlights and surface mounted zero cut off fixtures. All spectators seating areas will receive security and walkway lighting per the Town of Atherton Code. All new lights will be designed to be contained on site with no light spill over to adjacent streets and properties.

FENCING AND NETTING

The site today includes perimeter fencing to constrain access. In the future condition, separate fencing around each use is proposed. The following describes the fencing and netting proposed.

The aquatics center will be surrounded by sound walls at 12 feet height.

20 foot high perimeter chain-link fencing is proposed around the tennis court area as well as the track and football/soccer/lacrosse field.

The baseball fields would include 20 foot high backstop netting and 12 foot high chain link fencing with slats around the outfields. 30 foot high protective netting to prevent baseballs from leaving the site are proposed at the western side of both fields near residential uses and along the northern side of the northern-most field. Boundary trees are believed to block the majority of balls from leaving the site under the existing condition.

Note that it is possible the fence heights will be reduced and/or the protective netting omitted through coordination with the Town and neighboring properties. These items were analyzed as currently proposed as this condition would create the greatest impact with respect to Aesthetics and is therefore the more conservative analysis.

RESTROOMS

Restrooms are proposed adjacent to both baseball fields as well as in the aquatics building. These restrooms will replace the current portable toilets and will require extension of water and sewer lines across the site.

LANDSCAPING AND STORMWATER

Existing mature trees along the Project's boundaries will be largely maintained except the removal of a few trees at the driveway locations. New trees will be planed to fill existing gaps that have developed in the boundary screening trees as well as to add native scrub screen to boundary areas and additional parking lot trees. A landscaped bioretention basin is planned at the northwestern corner of the site. The Landscaping Plan is included as **Figure 3.8**.

CONSTRUCTION

The applicant is targeting August 2014 as the beginning of construction and expects the new facility to be open in 12 to 14 months. While this schedule may be delayed if approvals do not proceed as quickly as anticipated, this assumed start date is conservative for analyses in this document.

Project construction will not be phased, but will occur across the entire site at once. All current sports activities will be suspended during the entire construction period. Earthmoving is expected to be balanced across the site, which will result in disturbance across the entire area during grading activities as soil is redistributed.

PROJECT OBJECTIVES

1. Upgrade aging athletics facilities to modern standards.
2. Continue physical separation of Menlo College and Menlo School facilities.
3. Improve pedestrian circulation and experience.
4. Increase available parking to help accommodate vehicles for large events and improve flow during these events by opening a second access point from the parking area.
5. Preserve and enhance screening landscaping at boundaries.
6. Minimize sound at adjacent neighbors through state-of-the-art PA systems and site planning to use buildings as noise barriers where possible.

REQUIRED APPROVALS

Approval of the Project will require Planning Department review for Zoning Ordinance standards compliance from the Town of Atherton. Because the original use pre-dated Use Permit requirements, approval of a Use Permit will also be required. The proposed Noise Ordinance amendment would also need to be adopted. Additionally, the following reviews and approvals would be required:

Appropriate clearance through Caltrans is required for the new access point on El Camino Real.

Construction activities will require appropriate administrative permits including a Stormwater Pollution Prevention Plan.

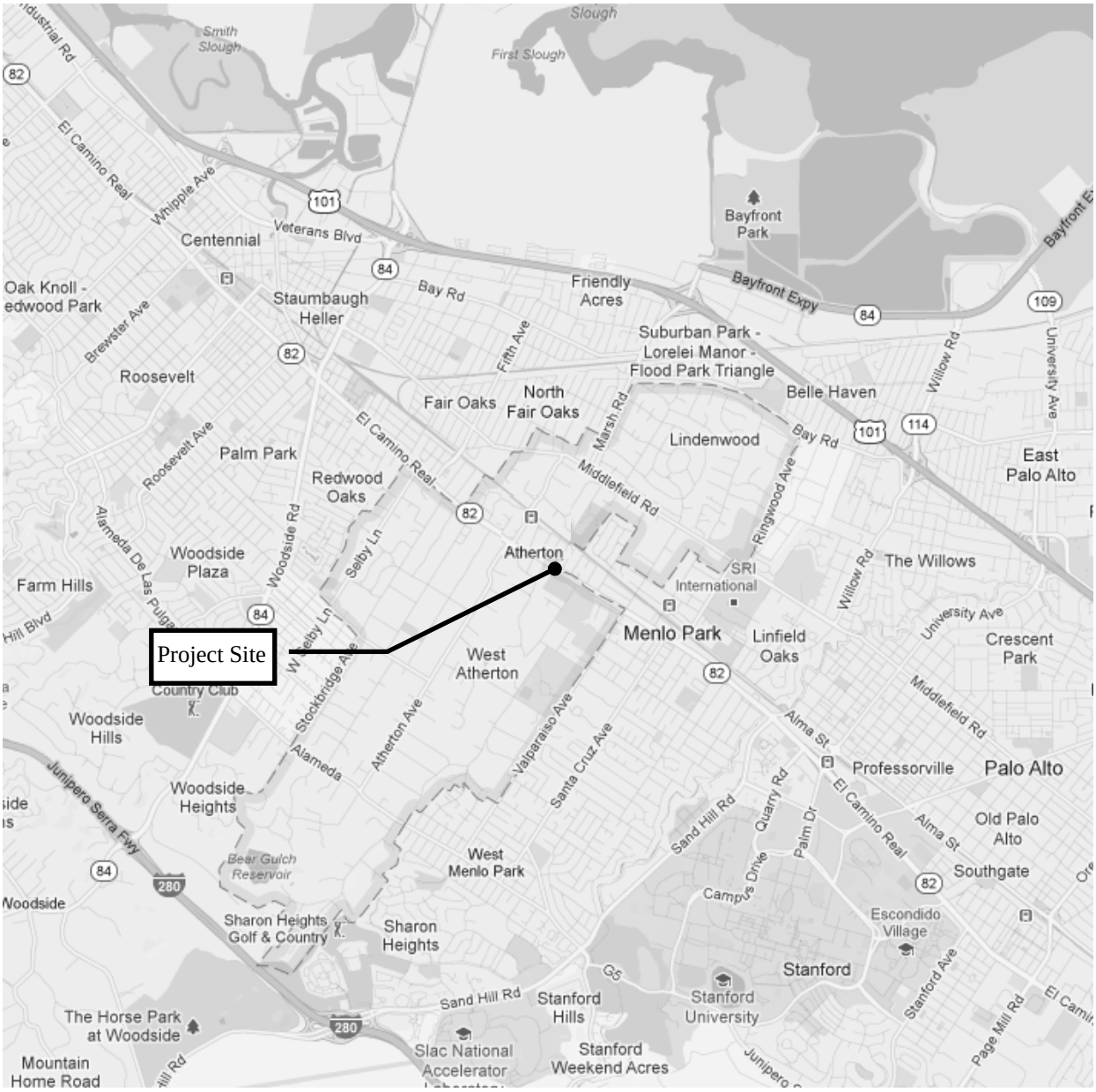


Figure 3.1: Regional Location

Town of Atherton boundaries shown as a dashed line.

Source: Google Inc., Google Maps, 2012 map data, with project location noted by Lamphier-Gregory.

This page intentionally left blank

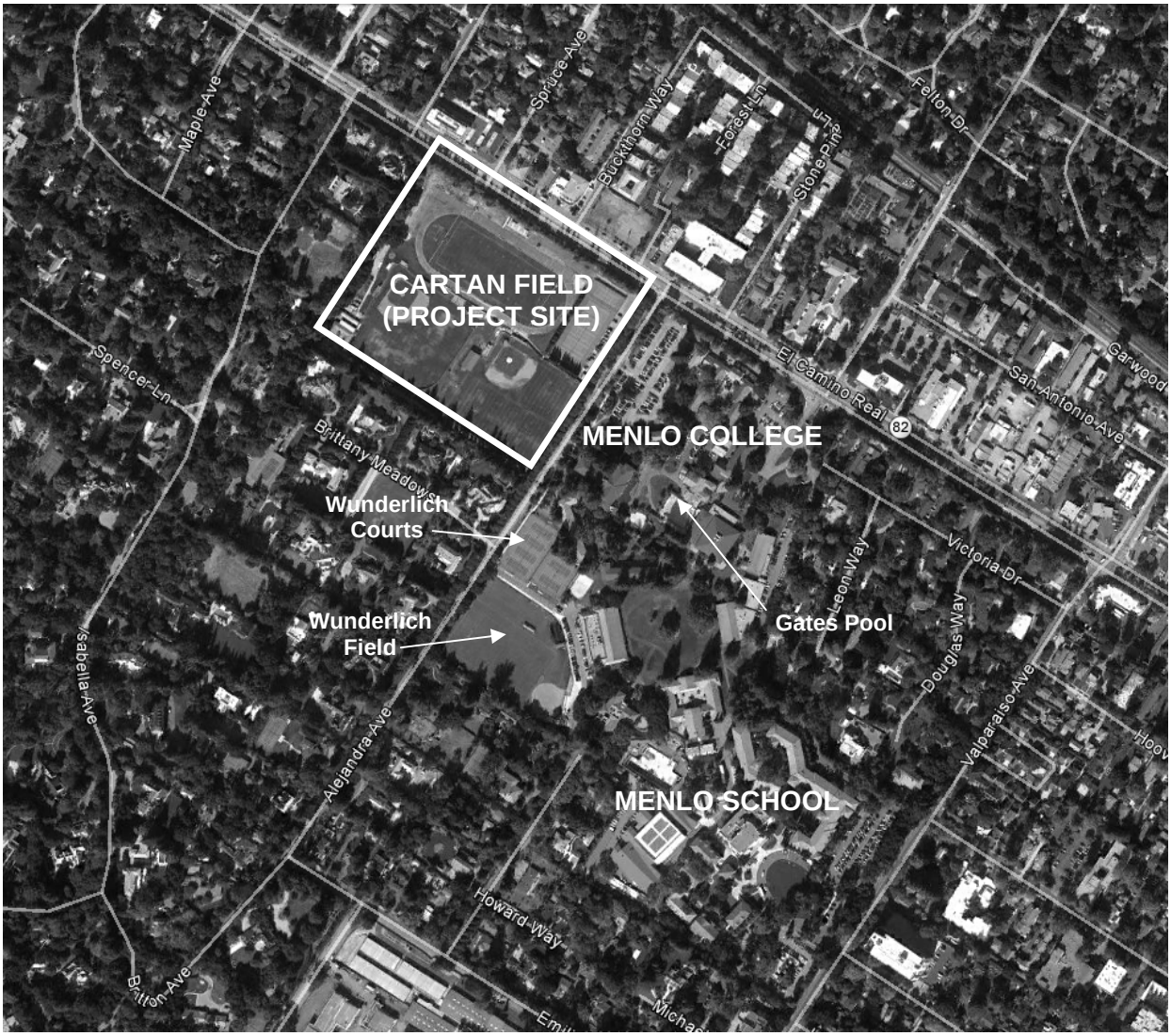
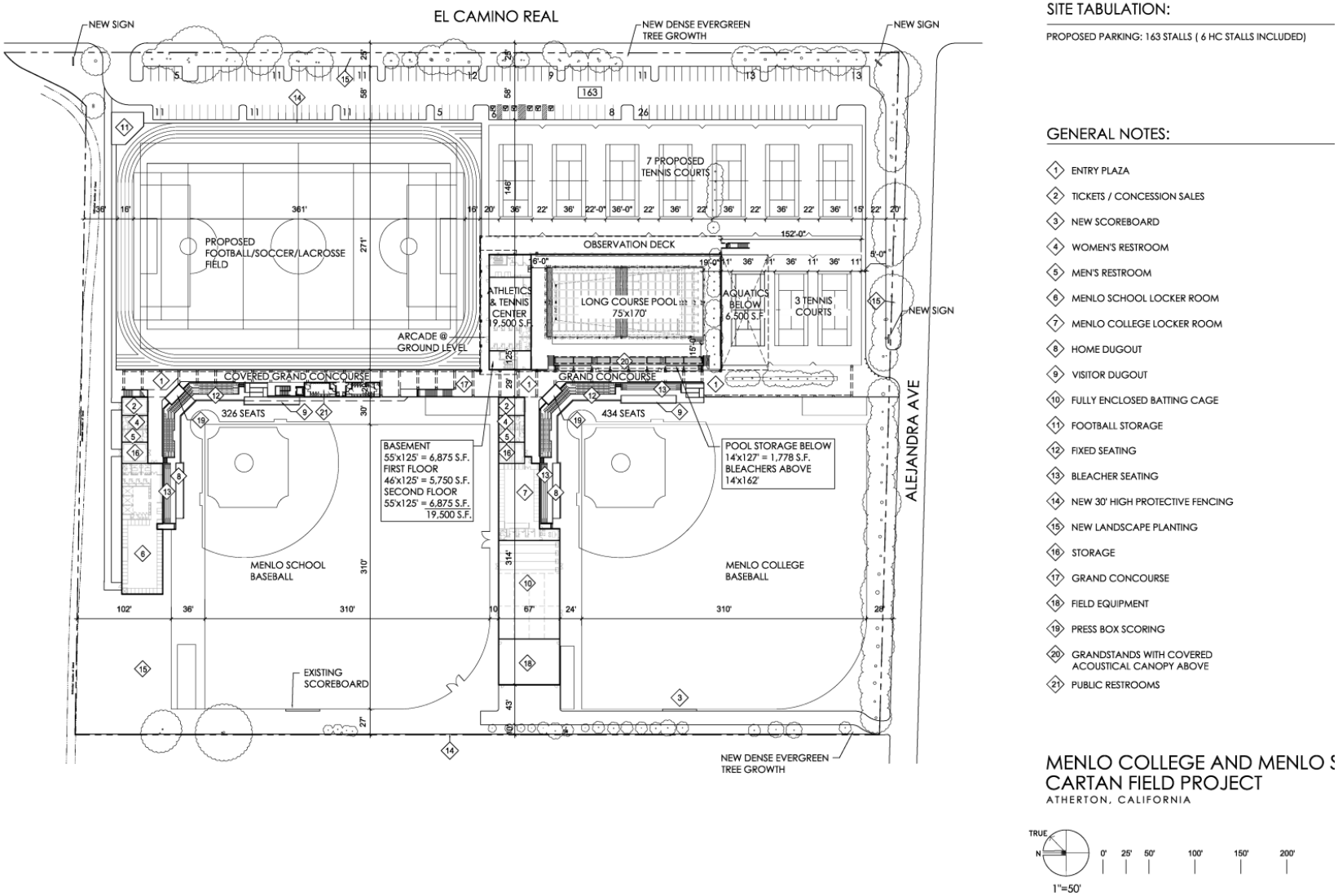


Figure 3.2: Project Site

Source: Google Inc., Google Earth imagery date 10/31/2011, with project location noted by Lamphier-Gregory.

This page intentionally left blank



SITE TABULATION:

PROPOSED PARKING: 163 STALLS (6 HC STALLS INCLUDED)

GENERAL NOTES:

1. ENTRY PLAZA
2. TICKETS / CONCESSION SALES
3. NEW SCOREBOARD
4. WOMEN'S RESTROOM
5. MEN'S RESTROOM
6. MENLO SCHOOL LOCKER ROOM
7. MENLO COLLEGE LOCKER ROOM
8. HOME DUGOUT
9. VISITOR DUGOUT
10. FULLY ENCLOSED BATTING CAGE
11. FOOTBALL STORAGE
12. FIXED SEATING
13. BLEACHER SEATING
14. NEW 30' HIGH PROTECTIVE FENCING
15. NEW LANDSCAPE PLANTING
16. STORAGE
17. GRAND CONCOURSE
18. FIELD EQUIPMENT
19. PRESS BOX SCORING
20. GRANDSTANDS WITH COVERED ACOUSTICAL CANOPY ABOVE
21. PUBLIC RESTROOMS

MENLO COLLEGE AND MENLO S
CARTAN FIELD PROJECT
ATHERTON, CALIFORNIA

TRUE N
0' 25' 50' 100' 150' 200'
1"=50'

Figure 3.3: Site Plan

Source: Kenneth Rodrigues and Partners dated 2/12/2013

This page intentionally left blank

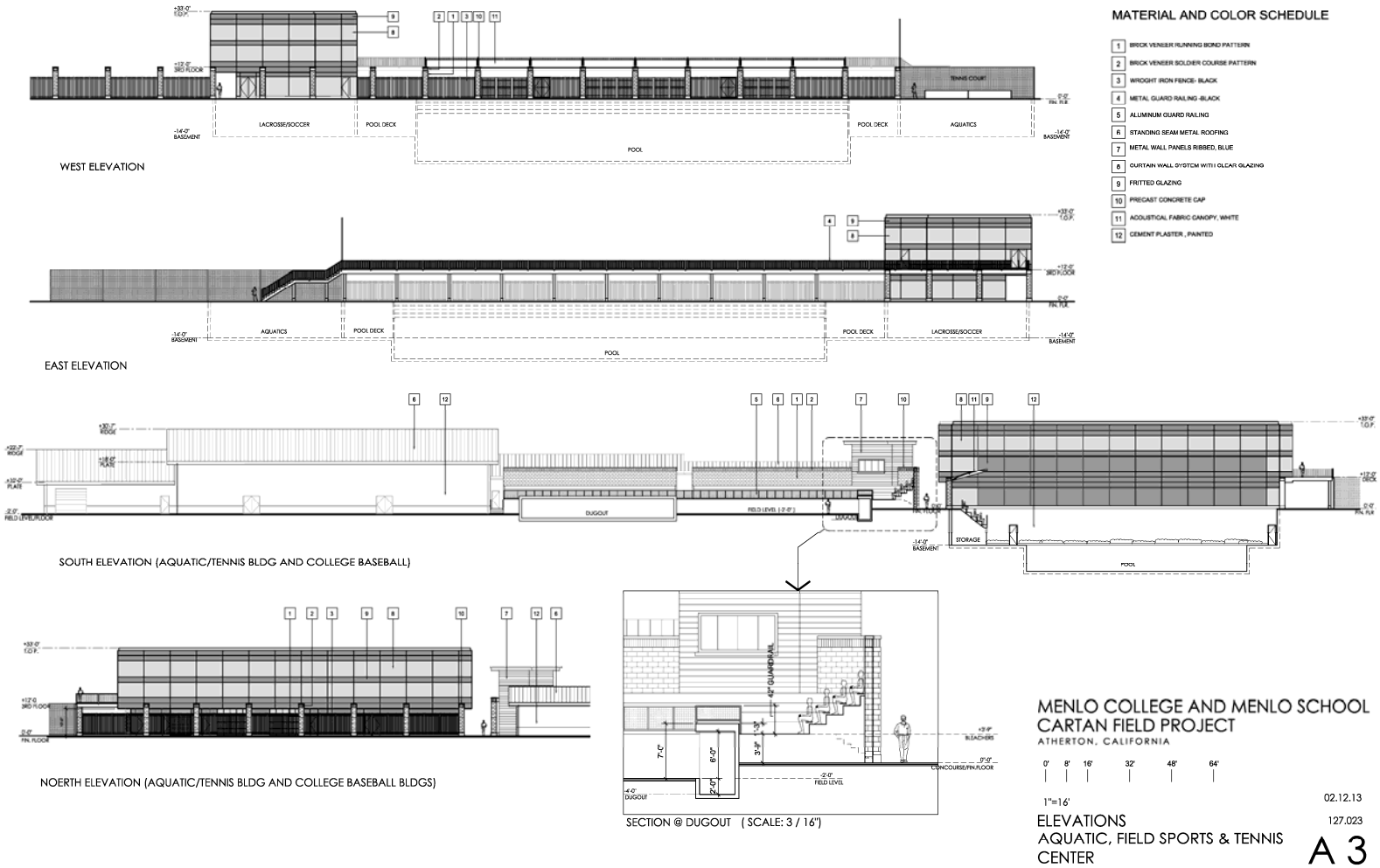


Figure 3.4: Elevations, Aquatic, Field Sports and Tennis

Source: Kenneth Rodrigues and Partners dated 2/12/2013

This page intentionally left blank

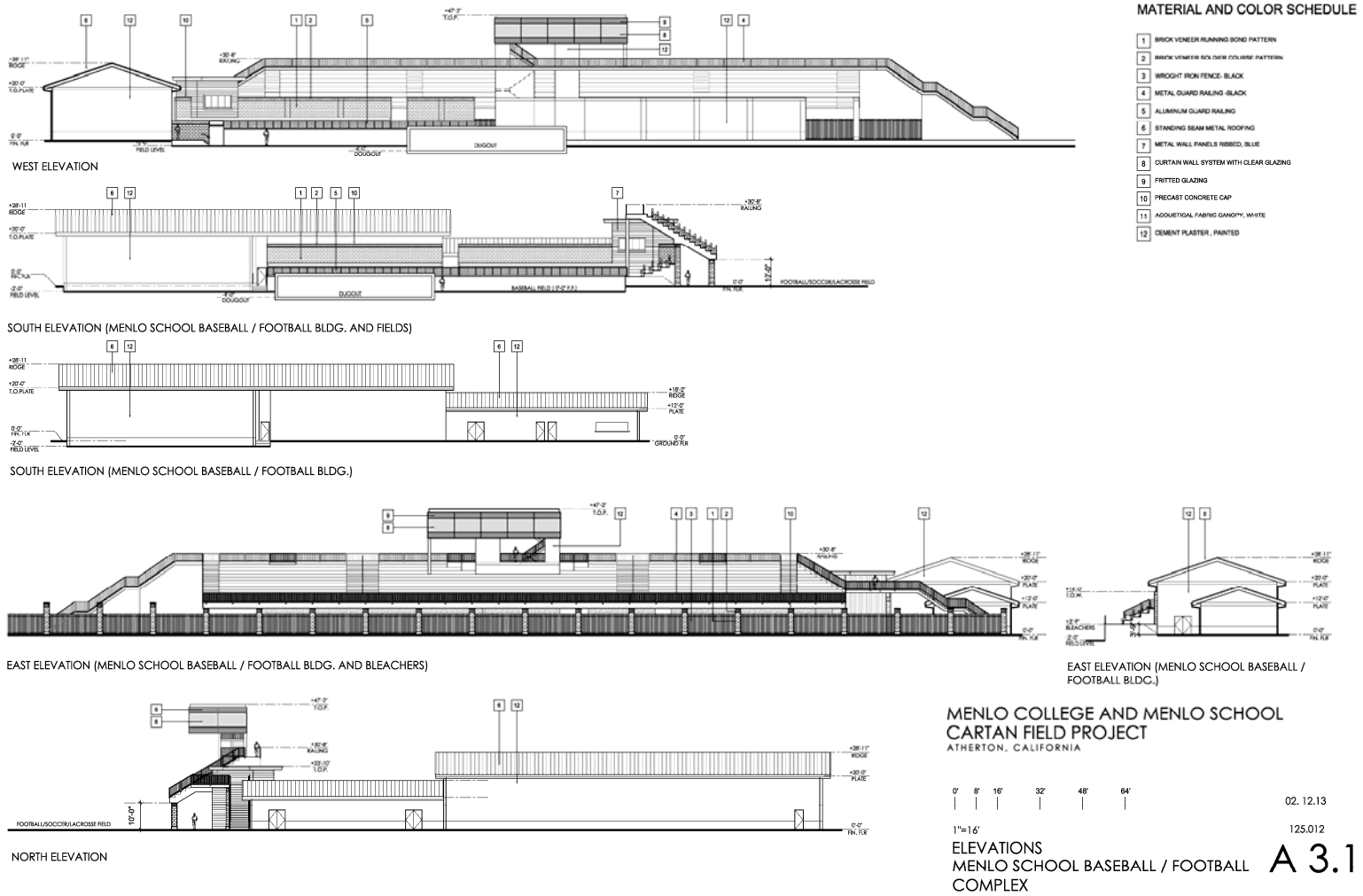


Figure 3.5: Elevations, Menlo School Baseball, Football Complex

Source: Kenneth Rodrigues and Partners dated 2/12/2013

This page intentionally left blank

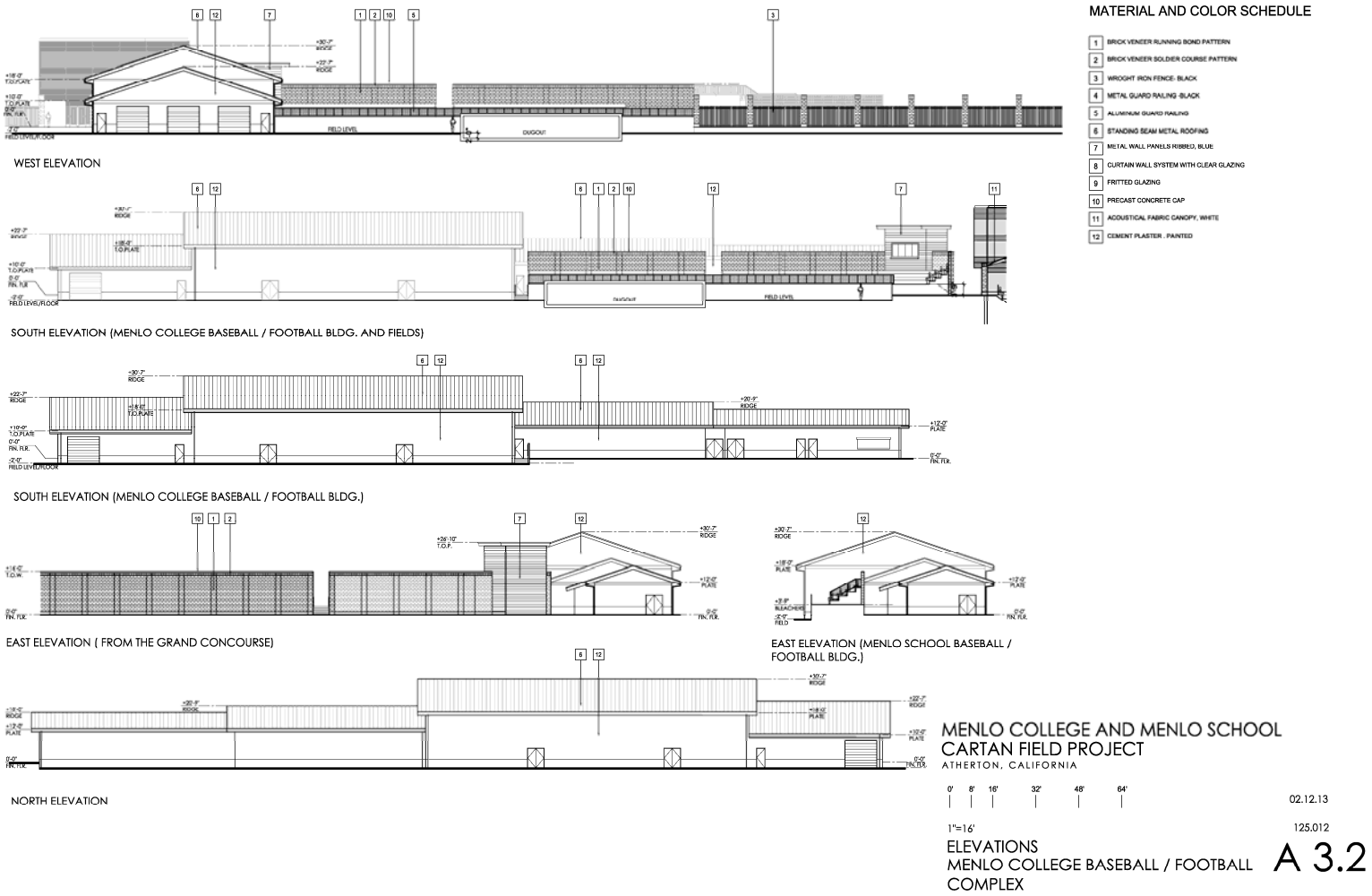


Figure 3.6: Elevations, Menlo College Baseball, Football Complex

Source: Kenneth Rodrigues and Partners dated 2/12/2013

This page intentionally left blank

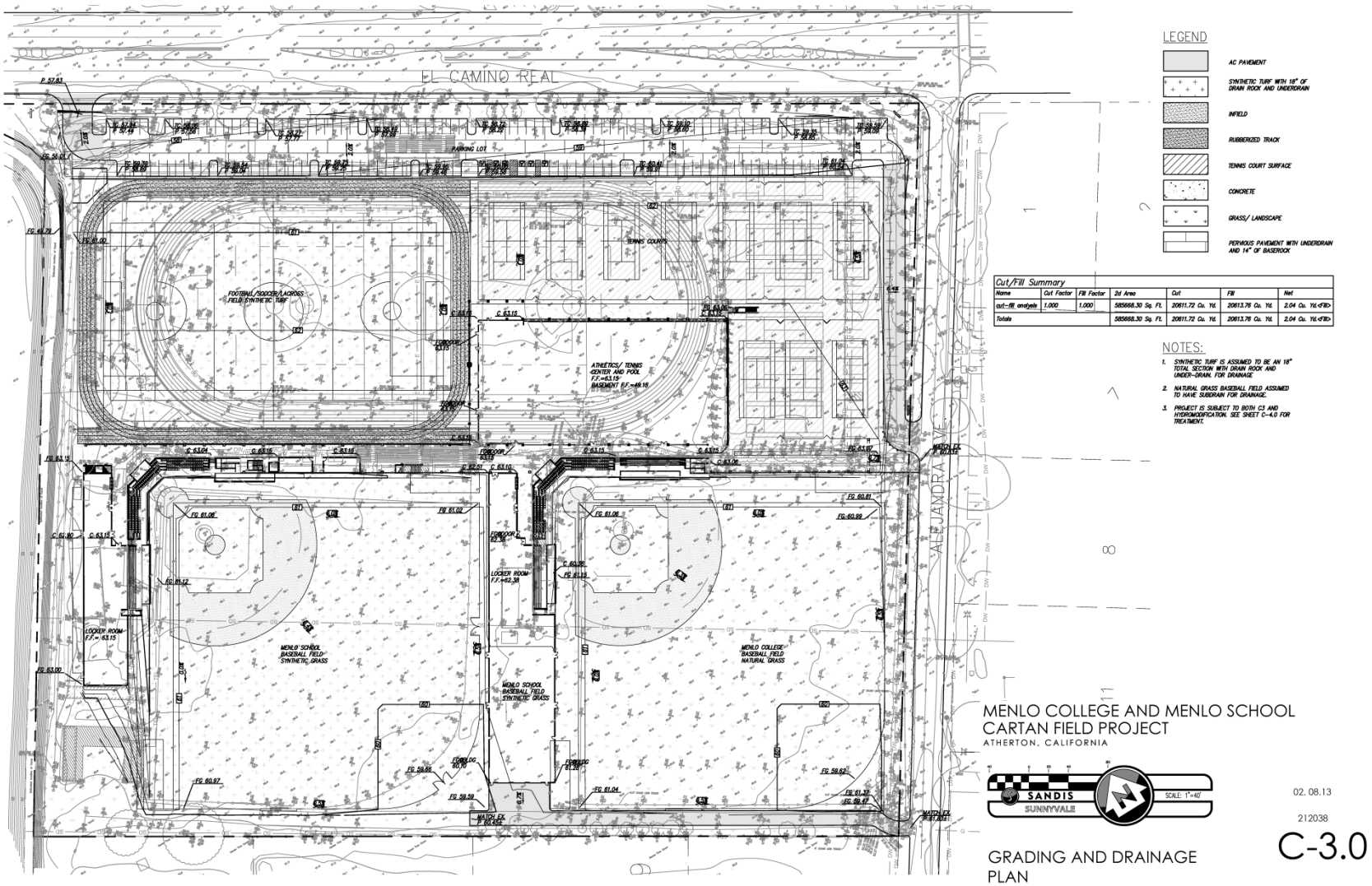


Figure 3.7: Grading and Drainage Plan

Source: Kenneth Rodrigues and Partners dated 2/12/2013

This page intentionally left blank

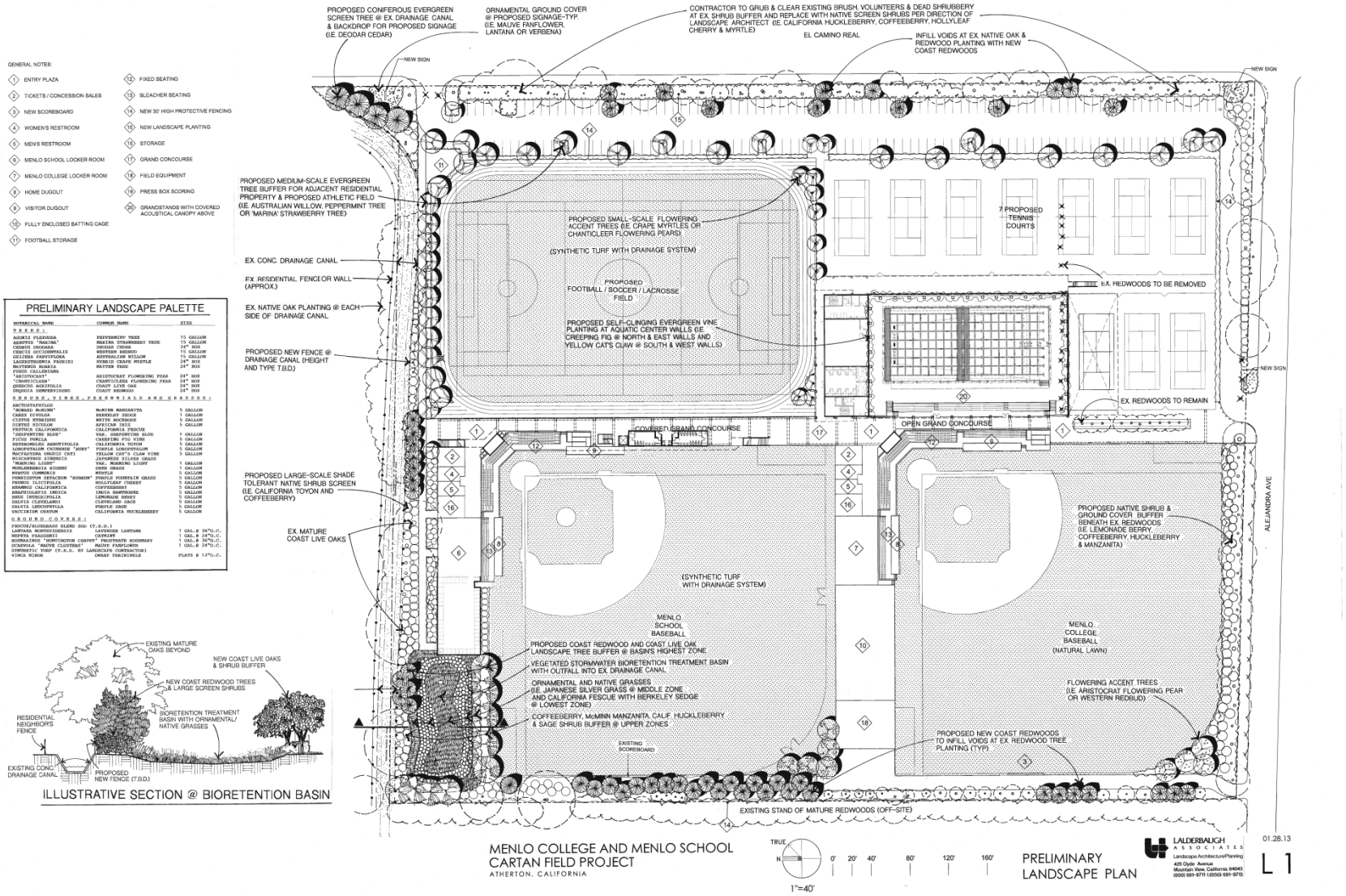


Figure 3.8: Preliminary Landscaping Plan

Source: Kenneth Rodrigues and Partners dated 2/12/2013

This page intentionally left blank

4

AESTHETICS

INTRODUCTION

New development can substantially change the visual qualities and characteristics of an urban area. It may also have long term lasting effects on the evolution of the urban area, thereby stimulating growth and increasing its attractiveness for new or expanding businesses, residential development or other desired or planned land uses. On the other hand, new development can change the character of an area by disrupting the visual and aesthetic features that establish the identity and value of an area for its existing residents, merchants or other users. Loss of such identity and value may discourage new investment, continued residency or business activity or other activities that attract visitors to the area.

The visual value of any given feature is highly subject to personal sensibilities and variations in subjective reaction to the features of an urban area. A negative visual impression on one person may be viewed as positive or beneficial by another. Objective or commonly agreed upon standards are difficult to establish, but an extensive body of literature is devoted to the subject of urban design and visual aesthetics.

ENVIRONMENTAL SETTING

The Atherton General Plan describes the Town's character as scenic, rural, thickly wooded residential area with abundant open space.

The Project site is developed with athletics facilities and is ringed by fences and a screening row of redwood and oak trees, which limit views onto the site. Existing gaps that have developed between trees would be filled with new plantings under the proposed landscape plan.

Adjacent residences to the west and north could be characterized as luxury single family homes and generally include additional trees and landscaping that further obscure views toward the site.

The large roadway El Camino Real bounds the Project site on the east side. Alejandra Avenue is a local roadway with a rural character that makes up the site's southern boundary. The main College campus is located immediately across this street from Cartan Field. Residential neighborhoods and the main School campus are located farther west along Alejandra Avenue.

REGULATORY SETTING

STATE

Caltrans Scenic Highway Program

California's Scenic Highway Program is administered by the California Department of Transportation (Caltrans). The Scenic Highway Program was created by the Legislature in 1963. Its purpose is to protect and enhance the natural scenic beauty of California highways and adjacent corridors, through special conservation treatment. A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been officially designated.

LOCAL

Town of Atherton General Plan

Town Character and Scenic Resources

The Atherton General Plan lists the land use goal 1.210, "To preserve the Town's character as a scenic, rural, thickly wooded residential area with abundant open space." It goes on to specify that, "Residential areas are designed to contain housing and related facilities such as schools and churches." This goal is supported by the following objectives:

Objective 1.221: To establish a framework for determining the location and extent of land uses within the Town's area of interest.

Objective 1.222: To limit the nature of land uses to those which are compatible with the overall land use planning goal.

Objective 1.223: To retain the high quality of maintenance and living environment existing in the Town's residential neighborhoods.

Though adjacent to residential neighborhoods, the site itself is designated for Public Facilities and Schools land use. Menlo College and Menlo School are two of three private schools identified in the General Plan as being located in this land use designation. While the General Plan does not include policies related to aesthetics specific to this type of land use, it does note Master Plans are requested and that Conditional Use Permits consistent with those plans would be required for new or relocated facilities.

The most recent update to the Menlo College Master Plan was submitted to the Town in 2010. The most recent update to the Menlo School Master Plan was submitted to the Town in April 2012. Both Master Plans are silent on the question of aesthetics related to the Cartan Field site.

Atherton's General Plan also includes the open space and conservation goal 4.210, "To protect both publically and privately held lands from deterioration of their rural charm, scenic value and environmental equilibrium." This goal is implemented by a number of policies, the following of which could be related to the Project aesthetics:

Policy 4.232: The Town shall endeavor to protect scenic resources, significant stands of natural vegetation, wildlife habitat, public safety and significant archaeological resources, both publicly and privately held.

Policy 2.33: The Town seeks to preserve the open space characteristics of existing public and private schools, churches, the Circus Club, the California Water Service property and the public parks.

The General Plan does not identify any specific scenic resources or scenic views.

Scenic Roadways and Corridors

According to the Town's General Plan, it is Town policy to preserve all streets and highways as scenic routes. Scenic corridors are defined as "the visual land area outside the road right-of-way and generally described as the "view from the road". It is within this area that development standards are applied to retain and enhance scenic qualities and restrict unsightly use of the land. These standards may include architectural and site review procedures and regulations on building setbacks, signs, grading, tree removal and undergrounding of utility lines."

Scenic roadway policies that could be related to the Project aesthetics include the following:

Policy 2.421: All streets and highways in the Town of Atherton shall be preserved as scenic routes.

Policy 2.423: The intrusion of El Camino on the ecology of the Town shall be minimized to the greatest extent possible by: A. Preserving center planting on El Camino Real; B. Minimizing the number of lots with access onto El Camino Real; C. Promoting the maintenance of walls, shrubbery and trees along the sides of El Camino Real.

Policy 2.425: On-street and visible off-street parking of vehicles and other means of transportation shall be carefully controlled.

Policy 2.427: Trees located in the right-of-way shall be preserved to the extent consistent with traffic safety.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

The following thresholds for measuring aesthetic impacts are based upon CEQA Guidelines thresholds:

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

This analysis focuses on the potential for aesthetic issues to rise to the level of an environmental impact and does not presuppose or override the Town's consistency determinations or design-level review actions.

SCENIC VISTAS

The Atherton General Plan does not identify any specific scenic vistas or public viewpoints from which scenic vistas are intended to be viewed.

The Project site is generally flat and is located in a generally flat area such that there are no sweeping views from or toward the Project site that could be substantially impacted by the Project.

The Project would have ***no impact*** related to scenic vistas. Scenic highways/corridors and scenic character are discussed separately in the remainder of this chapter.

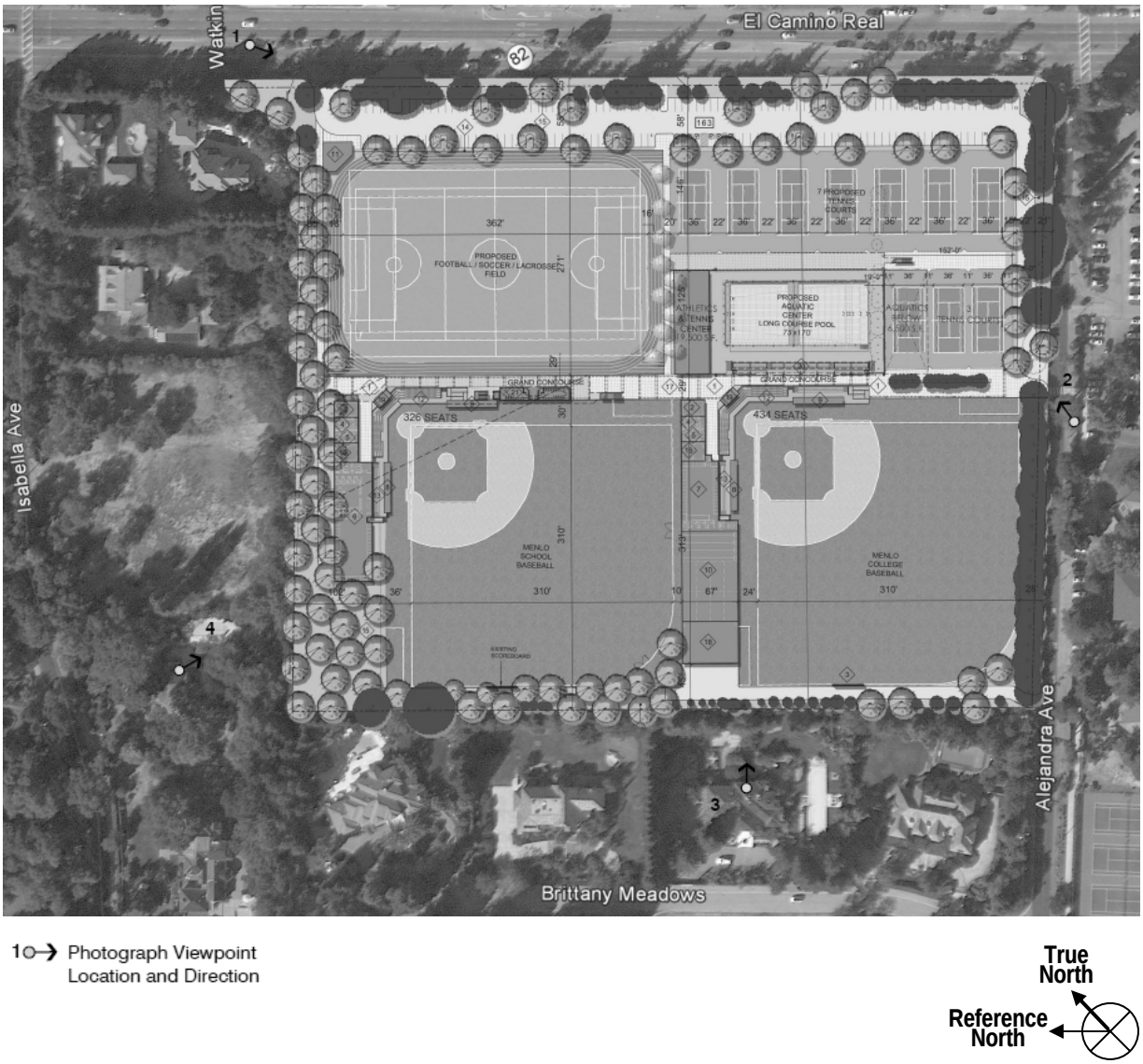
VISUAL CHARACTER

Impact Visual-1: **Changed Visual Character.** The proposed Project would change certain views of the site while retaining the same general character as an athletic facility. These changes would not constitute a substantial degradation of the existing character or quality of the site and its surroundings. This impact would be ***less than significant***.

The proposed Project retains the same use on the site as that existing, a athletics facility for a private School and College. While much of the site will remain as open playfields and tennis courts with related fencing, the Project would result in additional supporting building space, permanent grandstand structures, and fencing that will result in a site that looks different than it does today.

The site is ringed by a row of screening trees, which limit views onto the site from adjacent roadways and residential properties. The majority of these trees will remain with the Project, though some will be removed to make room for a driveway on El Camino Real and to widen the existing driveway on Alejandra Avenue. The Project landscaping plan calls for additional trees to be planted to fill existing gaps that have developed between trees in this boundary ring. For a conservative analysis, new landscaping is shown at the proposed size upon installation.

Visual simulations have been prepared to show how views onto the property would change with the Project. These include viewpoints generally from each of the four sides of the property, looking into driveways from the roadways and looking toward the property from second story windows of homes to the north and west (**Figure 4.1**). These viewpoint locations were chosen as those more likely to show the greatest change in views of the Project from that existing now (as opposed to ground-level views from neighbors or views from roadways not at driveways). The photos of existing conditions from these viewpoints and related visual simulations of Project conditions are shown in **Figures 4.2a/4.2b** to **4.5a/4.5b**.



1 Photograph Viewpoint Location and Direction

True North

Reference North

Figure 4.1: Viewpoint Locations

This page intentionally left blank

Figure 4.2a: Existing View from El Camino Real, looking southwest (Viewpoint 1)

Figure 4.2b: Simulation from El Camino Real, looking southwest

This page intentionally left blank

Figure 4.3a: Existing View from Alejandra Avenue, looking northeast (Viewpoint 2)

Figure 4.3b: Simulation from Alejandra Avenue, looking northeast

This page intentionally left blank

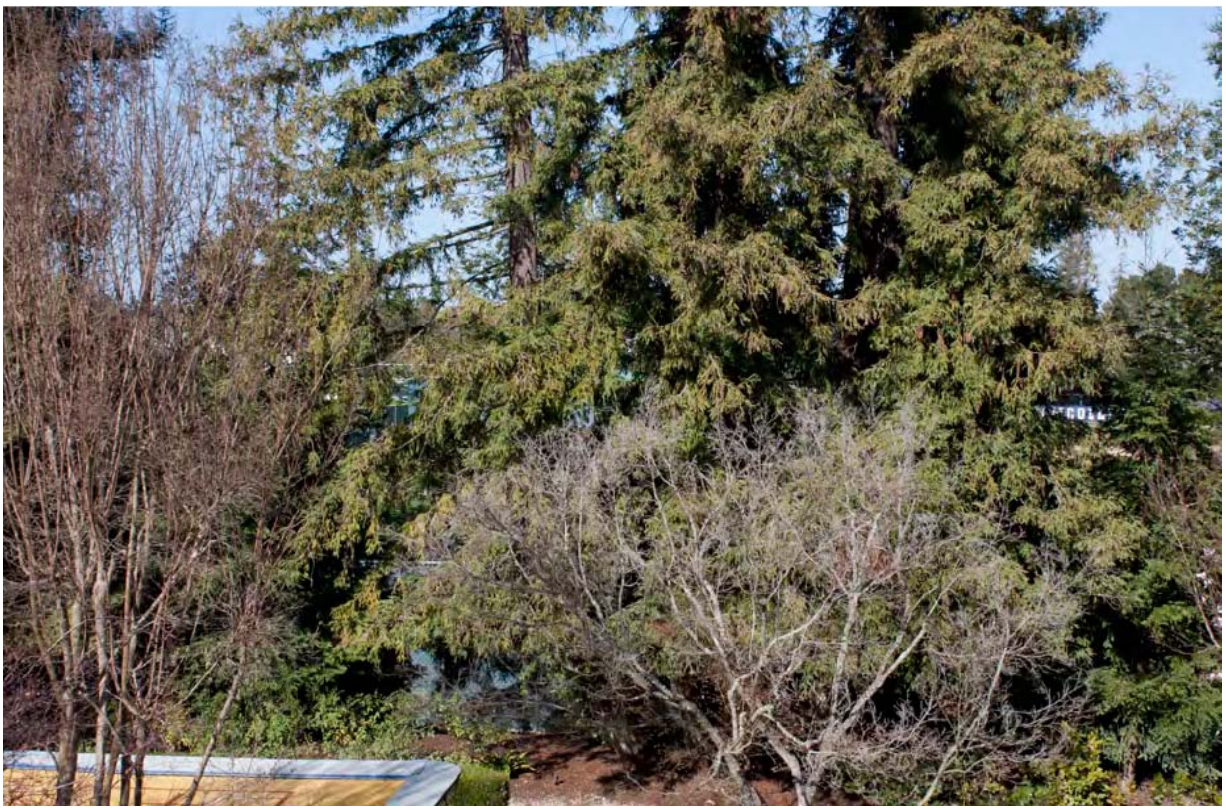


Figure 4.4a: Existing View from 4 Brittany Meadows Second-Story Window, looking east (Viewpoint 3)

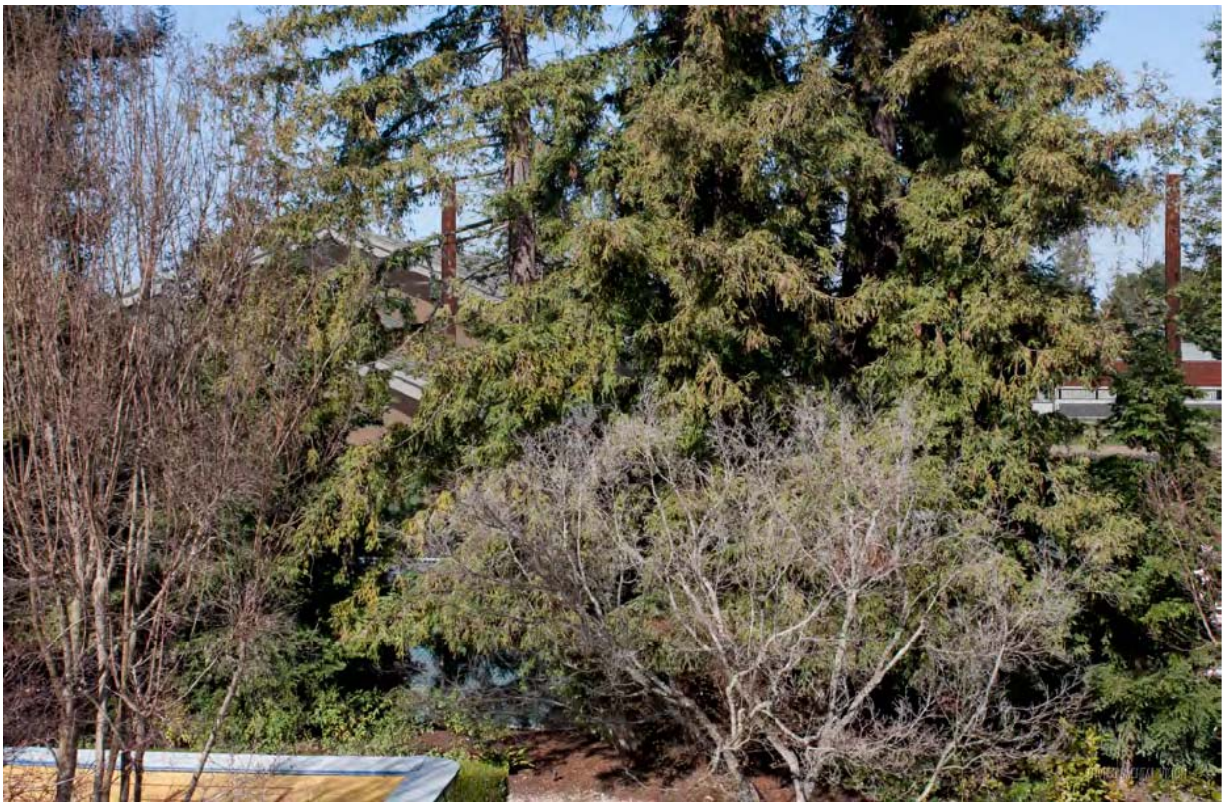


Figure 4.4b: Simulation from 4 Brittany Meadows Second-Story Window, looking east

This page intentionally left blank

Figure 4.5a: Existing View from 35 Isabella Avenue Second-Story Window, looking southeast (Viewpoint 4)

Figure 4.5b: Simulation from 35 Isabella Avenue Second-Story Window, looking southeast

This page intentionally left blank

As demonstrated in Figures 4.2a/4.2b through 4.5a/4.5b, views toward the Project site are characterized largely by the ring of screening trees, as would continue to be the case with the Project. With the removal of a portion of screening trees to accommodate a driveway on El Camino Real, southbound drivers along this roadway would be afforded glimpses toward parking and the football/soccer/lacrosse field and surrounding fencing. Drivers on Alejandra Avenue currently see a parking area and fenced tennis courts. With the Project, the parking would be removed and the view through a widened entrance would be of a pedestrian walkway, a driveway, and closer and taller fencing surrounding tennis courts. Partial views of the Project site from residential neighbors through the screening landscaping would change somewhat, particularly in that building structures on the site would be partially visible from the second story of residential neighbors with the Project.

The standard of significance under CEQA for determining whether a change in views toward a site would constitute a significant environmental impact is whether these views would constitute a *substantial degradation* of the existing visual character or quality of the site and its surroundings. The CEQA Guidelines do not provide a specific threshold of significance, so consistency with applicable local General Plan policies related to visual character can be analyzed to help assess the significance of the impact. Related policies are included in the Regulatory Setting of this chapter. A discussion of aesthetic-focused items relating to General Plan goals and policies is included below.

The Project site is currently developed as a athletics facility for a private School and College. The type of land use, and therefore the general character of the site, would not change with the Project.

The site does not include significant stands of natural vegetation, wildlife habitat, or anything otherwise identified as a scenic resource. (As discussed in Chapter 7, a building associated with historic events exists on the site, but it is generally not visible from off-site locations and would not be considered a scenic resource for purposes of aesthetics analysis.) Existing planted vegetation, particularly the most visible screening row of boundary trees, will be largely retained, and in places enhanced, by the Project.

The site is not currently designated by the Town as a park or open space, but rather as part of the School and College development. That being said, the General Plan notes that the Town seeks to preserve the open space characteristics of private schools. The term “open space characteristics” is not specifically defined, but can be assumed to generally refer to areas unencumbered by buildings and paving for driving/parking. Under this assumed definition, athletic fields would be considered to contribute to open space characteristics. With the erection of permanent building structures and grandstands on the site and expansion of the parking area, the “open space” on the site would be somewhat reduced. There is nothing in the General Plan that suggests prohibition of any new structures or paved areas on private school campuses, but only that “open space characteristics” remain. The site would remain predominantly athletics fields under the Project, and would therefore retain open space characteristics.

In summary, trees along the boundaries would screen all but partial and/or glimpsed views of site development, the Project site has no specific scenic resources, the nature of the use on the site would not change, and the site would retain open space characteristics. While some views of the site would be changed, these factors demonstrate that the changes would not constitute a substantial degradation of the existing visual character or quality of the site and its surroundings. The impact related to changed character would be ***less than significant***.

Note that this determination from an environmental perspective does not presuppose or constrain the Town’s decision-making with regard to their policies and regulations regarding architecture and aesthetics, which go beyond environmental concerns.

SCENIC HIGHWAYS AND CORRIDORS

Impact Visual-2: **Scenic Corridor.** All roadways and highways are considered to be scenic corridors in the Atherton General Plan. However, this is not an official state scenic highway designation and this local designation does not carry additional regulations. Additionally, the Project proposes retention of the majority of screening trees along the boundary roadways, limiting the potential change to views toward the site. Further, through substantial conformance with the applicable Town design standards and guidelines, any potential impact on this local scenic corridor would be ensured to be ***less than significant***.

There is only one designated or eligible State Scenic Highway near Atherton: Interstate 280.[1] This freeway is almost 3 miles from the Project site at its closest point and due to surrounding topography and landscaping, does not provide substantial views toward the Project site.

The Town considers all roads and highways within its boundaries to be scenic corridors. As demonstrated in Figures 4.2a/4.2b and 4.3a/4.3b, with the retention of the majority of trees along both El Camino Real and Alejandra Avenue, the views toward the site would remain largely unchanged for travelers along these roadways. The new driveway on El Camino Real and widened driveway on Alejandra Avenue would provide glimpses toward the activities on the site, but would not substantially damage scenic resources along these corridors. Therefore, the Project's impact related to development within a scenic highway or along a scenic corridor would be ***less than significant***.

LIGHT AND GLARE

Impact Visual-3: **Increased Light and Glare.** The Project would continue to operate during the daytime only, with no flood lighting for the athletics fields proposed. Some increase in the amount of lighting on the site could occur with increased safety lighting on buildings, walkways and parking areas. Lighting quality, intensity and design is required to meet Town standards to minimize glare, light trespass and "sky glow" and would be required to be within allowable levels at adjacent residential property lines. With adherence to applicable regulations and policies, impacts related to light and glare would be ***less than significant***.

CUMULATIVE AESTHETIC IMPACTS

As discussed above, the Project site would retain the same general character to that existing today and would not result in significant Project-specific aesthetic impacts. The surrounding area is generally fully developed, though there are a couple nearby vacant residential lots that would be anticipated to be developed in the future consistent with surrounding residential uses.

School and College main campuses would be anticipated to continue to evolve over time according to their Master Plans. This would ultimately be expected to result in a redistribution of building space, parking and open spaces, though the same general character would be expected to be retained. There are no specific projects proposed at this time on these campuses.

There are no additional significant impacts that are individually limited but cumulatively considerable.

---

[1] California Department of Transportation, State Scenic Highway Mapping System, http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm

5

AIR QUALITY

INTRODUCTION

This analysis evaluates the air quality impacts of the Project. (Note that Greenhouse Gas Emissions are discussed separately in Chapter 8.) The impacts associated with implementation of the Project were evaluated consistent with guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1] See the Thresholds of Significance (p. 6-9) for a discussion of the legal status of BAAQMD Thresholds and Guidelines.

This section utilizes information from the following reports prepared for this Project or analysis:

Emissions Model and Construction Health Risk Assessment Results compiled by Lamphier-Gregory for this analysis in March and April 2012 (included in Appendix B).

SETTING

METEOROLOGY

Atherton is in the Peninsula subregion of the San Francisco Bay Area air basin, with the following description excerpted from BAAQMD:

The peninsula region extends from northwest of San Jose to the Golden Gate. The Santa Cruz Mountains run up the center of the peninsula, with elevations exceeding 2000 feet at the southern end, decreasing to 500 feet in South San Francisco. The blocking effect of the Santa Cruz Mountains results in variations in summertime maximum temperatures in different parts of the peninsula. For example, in coastal areas and San Francisco the mean maximum summer temperatures are in the mid-60's, while in Redwood City the mean maximum summer temperatures are in the low-80's. Mean minimum temperatures during the winter months are in the high-30‘s to low-40‘s on the eastern side of the Peninsula and in the low 40‘s on the coast.

Two important gaps in the Santa Cruz Mountains occur on the peninsula. One of these is the Crystal Springs Gap, between Half Moon Bay and San Carlos. As the sea breeze strengthens on summer afternoons, the gap permits maritime air to pass across the mountains, and its cooling effect is commonly seen from San Mateo to Redwood City.

Annual average wind speeds range from 5 to 10 mph throughout the peninsula, with higher wind speeds usually found along the coast. Winds on the eastern side of the peninsula are often high in certain areas, such as near the Crystal Springs Gap.

---

[1] Bay Area Air Quality Management District. May 2011. *California Environmental Quality Act Air Quality Guidelines*.

On the east side of the mountains winds are generally from the west, although wind patterns in this area are often influenced greatly by local topographic features.

CRITERIA AIR POLLUTANTS

Ambient air quality standards have been established by state and federal environmental agencies for specific air pollutants most pervasive in urban environments. These pollutants are referred to as criteria air pollutants because the standards established for them were developed to meet specific health and welfare criteria set forth in the enabling legislation. The criteria air pollutants emitted by development, traffic and other activities anticipated under the proposed development include ozone (O_3), ozone precursors oxides of nitrogen and reactive organic gases (NOx and ROG), carbon monoxide (CO), nitrogen dioxide (NO_2), and suspended particulate matter (PM_{10} and $PM_{2.5}$). Other criteria pollutants, such as lead (Pb) and sulfur dioxide (SO_2), would not be substantially emitted by the proposed development or traffic, and air quality standards for them are being met throughout the Bay Area.

Ozone (O_3)

While O_3 serves a beneficial purpose in the upper atmosphere (stratosphere) by reducing ultraviolet radiation potentially harmful to humans, when it reaches elevated concentrations in the lower atmosphere it can be harmful to the human respiratory system and to sensitive species of plants. O_3 concentrations build to peak levels during periods of light winds, bright sunshine, and high temperatures. Short-term O_3 exposure can reduce lung function in children, make persons susceptible to respiratory infection, and produce symptoms that cause people to seek medical treatment for respiratory distress. Long-term exposure can impair lung defense mechanisms and lead to emphysema and chronic bronchitis. Sensitivity to O_3 varies among individuals, but about 20 percent of the population is sensitive to O_3, with exercising children being particularly vulnerable. O_3 is formed in the atmosphere by a complex series of photochemical reactions that involve “ozone precursors” that are two families of pollutants: oxides of nitrogen (NOx) and reactive organic gases (ROG). NOx and ROG are emitted from a variety of stationary and mobile sources. While NO_2, an oxide of nitrogen, is another criteria pollutant itself, ROGs are not in that category, but are included in this discussion as O_3 precursors.

Carbon Monoxide (CO)

Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause dizziness and fatigue, impair central nervous system function, and induce angina in persons with serious heart disease. Primary sources of CO in ambient air are passenger cars, light-duty trucks, and residential wood burning. Emission controls placed on automobiles and the reformulation of vehicle fuels have resulted in a sharp decline in CO levels, especially since 1991.

Nitrogen Dioxide (NO_2)

The major health effect from exposure to high levels of NO_2 is the risk of acute and chronic respiratory disease. NO_2 is a combustion by-product, but it can also form in the atmosphere by chemical reaction. NO_2 is a reddish-brown colored gas often observed during the same conditions that produce high levels of O_3 and can affect regional visibility. NO_2 is one compound in a group of compounds consisting of oxides of nitrogen (NOx). As described above, NOx is an O_3 precursor compound.

Particulate Matter (PM)

Respirable particulate matter, PM_{10}, and fine particulate matter, $PM_{2.5}$, consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. PM_{10} and $PM_{2.5}$ represent fractions of particulate matter that can be inhaled and cause adverse health effects. PM_{10} and $PM_{2.5}$ are a health concern, particularly at levels above the Federal and State ambient air quality

standards. $PM_{2.5}$ (including diesel exhaust particles) is thought to have greater effects on health because minute particles are able to penetrate to the deepest parts of the lungs. Scientific studies have suggested links between fine particulate matter and numerous health problems including asthma, bronchitis, acute and chronic respiratory symptoms such as shortness of breath and painful breathing. Children are more susceptible to the health risks of $PM_{2.5}$ because their immune and respiratory systems are still developing. Very small particles of certain substances (e.g., sulfates and nitrates) can also directly cause lung damage or can contain absorbed gases (e.g., chlorides or ammonium) that may be injurious to health.

Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as mining and demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. In addition to health effects, particulates also can damage materials and reduce visibility. Dust comprised of large particles (diameter greater than 10 microns) settles out rapidly and is more easily filtered by human breathing passages. This type of dust is considered more of a soiling nuisance rather than a health hazard.

In 1983, CARB replaced the standard for “suspended particulate matter” with a standard for suspended PM_{10} or “respirable particulate matter.” This standard was set at 50 µg/m3 for a 24-hour average and 30 µg/m3 for an annual average. CARB revised the annual PM_{10} standard in 2002, pursuant to the Children's Environmental Health Protection Act. The revised PM_{10} standard is 20 µg/m3 for an annual average. $PM_{2.5}$ standards were first promulgated by the EPA in 1997, and were recently revised to lower the 24-hour $PM_{2.5}$ standard to 35 µg/m3 for 24-hour exposures and revoked the annual PM_{10} standard due to lack of scientific evidence correlating long-term exposures of ambient PM_{10} with health effects. CARB has adopted an annual average $PM_{2.5}$ standard, which is set at 12 µg/m3, which is more stringent than the Federal standard of 15 µg/m3.

TOXIC AIR CONTAMINANTS

Besides the "criteria" air pollutants, there is another group of substances found in ambient air referred to as Hazardous Air Pollutants under the Federal Clean Air Act and Toxic Air Contaminants (TACs) under the California Clean Air Act. These contaminants tend to be localized and are found in relatively low concentrations in ambient air. However, they can result in adverse chronic health effects if exposure to low concentrations occurs for long periods. They are regulated at the local, state, and federal level.

TACs are a broad class of compounds known to cause morbidity or mortality (cancer risk), and include, but are not limited to, the criteria air pollutants listed above. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., benzene near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, state, and federal level.

Diesel exhaust is the predominant TAC in urban air, and is estimated to represent about two-thirds of the cancer risk from TACs (based on the statewide average). According to CARB, diesel exhaust is a complex mixture of gases, vapors and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by ARB, and are listed as carcinogens either under State Proposition 65 or under the Federal Hazardous Air Pollutants programs.

CARB reports that recent air pollution studies have shown an association that diesel exhaust and other cancer-causing toxic air contaminants emitted from vehicles are responsible for much of the overall

cancer risk from TACs in California. Particulate matter emitted from diesel-fueled engines (diesel particulate matter [DPM]) was found to comprise much of that risk. In August, 1998, CARB formally identified DPM as a TAC. Diesel particulate matter is of particular concern, since it can be distributed over large regions, thus leading to widespread public exposure. The particles emitted by diesel engines are coated with chemicals, many of which have been identified by EPA as hazardous air pollutants, and by CARB as TACs. Diesel engines emit particulate matter at a rate about 20 times greater than comparable gasoline engines. The vast majority of diesel exhaust particles (over 90 percent) consist of $PM_{2.5}$, which are the particles that can be inhaled deep into the lung. Like other particles of this size, a portion will eventually become trapped within the lung, possibly leading to adverse health effects. While the gaseous portion of diesel exhaust also contains TACs, CARB's 1998 action was specific to DPM, which accounts for much of the cancer-causing potential from diesel exhaust. California has adopted a comprehensive diesel risk reduction program to reduce DPM emissions 85 percent by 2020. The U.S. EPA and CARB adopted low sulfur diesel fuel standards in 2006 that reduce diesel particulate matter substantially.

In cooler weather, smoke from residential wood combustion can be a source of TACs. Localized high TAC concentrations can result when cold stagnant air traps smoke near the ground and, with no wind, the pollution can persist for many hours, especially in sheltered valleys during winter. Wood smoke also contains a significant amount of PM_{10} and $PM_{2.5}$. Wood smoke is an irritant, and is implicated in worsening asthma and other chronic lung problems. BAAQMD Regulation 6, Rule 3, disallows wood-burning devices in new construction, except those meeting U.S. EPA emissions targets and approved by the Air Pollution Control Officer of the Bay Area Air Quality Management. Compliance with this rule can be assumed.

ODORS

Objectionable odors may be associated with a variety of pollutants. Common sources of odors include wastewater treatment plants, landfills, composting facilities, refineries and chemical plants. Odors rarely have direct health impacts, but they can be very unpleasant and can lead to concern over possible health effects among the public. Each year the Air District receives thousands of citizen complaints about objectionable odors.[2]

STATE OF CALIFORNIA AND FEDERAL AIR QUALITY STANDARDS

Both the California Air Resource Board and the U.S. Environmental Protection Agency have established ambient air quality standards for common pollutants, including ozone, CO, NO_2, PM_{10} and $PM_{2.5}$. [3] These ambient air quality standards represent safe levels that avoid specific adverse health effects associated with each pollutant. Individuals vary widely in their sensitivity to air pollutants, and standards are set to protect more pollution-sensitive populations (e.g., children and the elderly). National and state standards are reviewed and updated periodically based on new health studies. California ambient standards tend to be at least as protective as national ambient standards, and are often more stringent. National and California ambient air quality standards are shown in **Table 5.1**, below.

For planning purposes, regions like the San Francisco Bay Area Air Basin are given an air quality status designation by the federal and state regulatory agencies. Areas with monitored pollutant concentrations that are lower than ambient air quality standards are designated "attainment" on a

[2] BAAQMD, BAAQMD CEQA Guidelines, December 2009, as amended.

[3] Other pollutants (*e.g.*, lead, sulfur dioxide) also have ambient standards, but they are not discussed in this document because emissions of these pollutants from the Project are expected to be negligible.

pollutant-by-pollutant basis. When monitored concentrations exceed ambient standards within an air basin, it is designated "nonattainment" for that pollutant. U.S. EPA designates areas as "unclassified" when insufficient data are available to determine the attainment status; however, these areas are typically considered to be in attainment of the standard.

Table 5.1: Health-Based Ambient Air Quality Standards

Pollutant	Averaging Time	California Standard	National Standard
Ozone	1 Hour	0.09 ppm	---
	8 Hour	0.070 ppm	0.075 ppm
Carbon Monoxide	1 Hour	20 ppm	35 ppm
	8 Hour	9.0 ppm	9 ppm
Nitrogen Dioxide	1 Hour	0.18 ppm	0.100 ppm
	Annual	0.030 ppm	0.053 ppm
Sulfur Dioxide	1 Hour	---	0.075 ppm
	24 Hour	0.04 ppm	---
Particulates	24 Hour	50 ug/m3	150 ug/m3
< 10 microns	Annual	20 ug/m3	---
Particulates	24 Hour	---	35 ug/m3
< 2.5 microns	Annual	15 ug/m3	15 ug/m3

Concentrations: ppm = parts per million ug/m3 = micrograms per cubic meter
Source: Bay Area Air Quality Management District, Bay Area Pollution Summary – 2012.

EXISTING AIR QUALITY

Air quality in the region is controlled by the rate of pollutant emissions and meteorological conditions. Meteorological conditions such as wind speed, atmospheric stability, and mixing height may all affect the atmosphere's ability to mix and disperse pollutants. Long-term variations in air quality typically result from changes in air pollutant emissions, while frequent, short-term variations result from changes in atmospheric conditions. The San Francisco Bay Area is considered to be one of the cleanest metropolitan areas in the country with respect to air quality. BAAQMD monitors air quality conditions at more than 30 locations throughout the Bay Area. The closest monitoring station to the Project is located in Redwood City. Monitoring station measurements indicate that air quality in the vicinity of the Project generally performs well against State standards for criteria air pollutants with few exceedances of pollutant standards between 2010 and 2012, the most recent year available. **Table 5.2** summarizes exceedances of the state and federal standards at the Redwood City monitoring site and Bay Area-wide.

Table 5.2: Summary of Criteria Air Pollution Monitoring Data

Pollutant	Standard	Monitoring Site	Days Standard Exceeded		
			2010	2011	2012
Ozone	State 1-Hour	Redwood City	2	0	0
		SF Bay Area Air	8	5	3
Ozone	Federal 8-Hour	Redwood City	1	0	0
		SF Bay Area Air	9	4	4
Ozone	State 8-Hour	Redwood City	1	0	0
		SF Bay Area Air	11	10	8
PM_{10}	Federal 24-Hour	Redwood City	-	-	-
		SF Bay Area Air	0	0	0
PM_{10}	State 24-Hour	Redwood City	-	-	-
		SF Bay Area Air	2	3	2
$PM_{2.5}$	Federal 24-Hour	Redwood City	1	1	0
		SF Bay Area Air	6	8	3
Carbon Monoxide	State/Federal 8-Hour	Redwood City	0	0	0
		SF Bay Area Air	0	0	0
Nitrogen Dioxide	State 1-Hour	Redwood City	0	0	0
		SF Bay Area Air	0	0	0

Notes:
PM_{10} monitoring was discontinued at Redwood City in 2008.
PM_{10} and $PM_{2.5}$ are measured every sixth day in Redwood City and other Bay Area sites, so the number of days exceeding the standard is estimated.
Source: Bay Area Air Quality Management District Air Pollution Summaries (http://www.baaqmd.gov/Divisions/Communications-and-Outreach/Air-Quality-in-the-Bay-Area/Air-Quality-Summaries.aspx)

Table 5.2 shows that air quality as a result of exceedances of O_3 and $PM_{2.5}$ and PM_{10} standards occur in the San Francisco Bay Area. In recent years, the State and federal O_3 standards have been exceeded at least somewhere in the Bay Area on 8 to 11 days per year.

The Bay Area has exceeded the $PM_{2.5}$ standard on 3 to 8 sampling days per year. The Redwood City monitoring site logged 0 or 1 exceedance per year between 2010 and 2012. Standards for CO and NO_2, or any other criteria air pollutant, were not exceeded anywhere in the Bay Area during this time period.[4]

ATTAINMENT STATUS

Areas that do not violate ambient air quality standards are considered to have attained the standard. Violations of ambient air quality standards are based on air pollutant monitoring data and are judged for each air pollutant. The attainment status for the area is summarized in **Table 5.3**, below. The Bay Area as a whole does not meet state or federal ambient air quality standards for ground level ozone and $PM_{2.5}$ and State standards for PM_{10} and $PM_{2.5}$.

[4] BAAQMD, Air Pollution Summaries, http://www.baaqmd.gov/Divisions/Communications-and-Outreach/Air-Quality-in-the-Bay-Area/Air-Quality-Summaries.aspx , accessed March 28, 2013.

Table 5.3: Regional Attainment Status

Pollutant	Federal Status	State Status
Ozone (O_3) – 1-Hour Standard	Not Applicable	Nonattainment
Ozone (O_3) – 8-Hour Standard	Nonattainment	Nonattainment
Respirable Particulate Matter (PM_{10})	Unclassified	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment	Attainment
Nitrogen Dioxide (NO_2)	Unclassified	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Sulfates	Not Applicable	Attainment
Lead	Attainment	Not Applicable
Hydrogen Sulfide	Not Applicable	Unclassified
Visibility Reducing Particles	Not Applicable	Unclassified

Source: Bay Area Air Quality Management District. http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm

At the State level, the region is considered non-attainment for ground level O_3 and non-attainment for PM_{10} and $PM_{2.5}$. The area is considered attainment or unclassified for all other pollutants.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Atherton is located within the nine county San Francisco Bay Area Air Basin and therefore within the jurisdiction of BAAQMD. BAAQMD enforces rules and regulations regarding air pollution sources and is the primary agency preparing the regional air quality plans mandated under state and federal law.

According to the standards of the federal Clean Air Act, the Bay Area is in attainment with all ambient air quality standards except for state and national ozone standards and national particulate matter ambient air quality standards. The nonattainment status is attributed to the region's development history. Past, present and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In 1991, the BAAQMD, MTC and ABAG prepared the Bay Area 1991 Clean Air Plan or CAP. This air quality plan addresses the California Clean Air Act. Updates are developed approximately every three years. The plans were meant to demonstrate progress toward meeting the more stringent 1-hour ozone CAAQS. The latest update to the plan, which was adopted in September 2010, is called the Bay Area 2010 Clean Air Plan. The anticipated 2013 update was not yet adopted at the time this report was written. The plan includes the following:

- Updates the recent Bay Area 2005 Ozone Strategy in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce ozone;
- Provide a control strategy to reduce ozone, particulate matter (PM), TACs, and greenhouse gases in a single, integrated plan;
- Review progress in improving air quality in recent years; and
- Establish emission control measures to be adopted or implemented in the 2010-2012 timeframe.

BAAQMD also provides a document titled *California Environmental Quality Act Air Quality Guidelines* ("BAAQMD Guidelines"), which provides guidance for consideration by lead agencies, consultants, and other parties evaluating air quality impacts in the San Francisco Bay Area Air Basin conducted pursuant to CEQA. The document provides guidance on evaluating air quality impacts of development projects and local plans, determining whether an impact is significant, and mitigating significant air quality impacts.

BAAQMD has recently updated these Guidelines in coordination with adoption of new thresholds of significance on June 2, 2010.[5] The most recent version of the Guidelines are dated May 2012, (though the May 2011 version includes the updated thresholds, as discussed below). The updated CEQA Guidelines revised significance thresholds, assessment methodologies, and mitigation strategies for criteria pollutants, air toxics, odors, and greenhouse gas emissions.

IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Appendix G of the CEQA Guidelines (Environmental Checklist) contains a list of air quality effects that may be considered significant. Implementation of the Project would have a significant effect on the environment if it were to:

1. Conflict with or obstruct implementation of the applicable air quality plan;

2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

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);

4. Expose sensitive receptors to substantial pollutant concentrations; or

5. Create objectionable odors affecting a substantial number of people.

The CEQA Guidelines state that, where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. BAAQMD updated their thresholds on June 2, 2010 and the BAAQMD Guidelines in May 2011, which have been used for this air quality analysis, as detailed under each item below.

On March 5, 2012 the Alameda County Superior Court issued a judgment finding that BAAQMD had failed to comply with CEQA when it adopted its 2010 Thresholds. The court did not determine whether the Thresholds were valid on the merits, but found that the adoption of the Thresholds was a project under CEQA. The court issued a writ of mandate ordering BAAQMD to set aside the Thresholds and cease dissemination of them until BAAQMD had complied with CEQA.

[5] Bay Area Air Quality Management District, June 2, 2010, News Release, available at: http://www.baaqmd.gov/~/media/Files/Communications%20and%20Outreach/Publications/News%20Releases/2010/ceqa_100602.ashx .

This analysis is based upon these BAAQMD 2010 Thresholds. While it is possible to instead analyze the Project under BAAQMD's previous 1999 Thresholds, the newer thresholds are more conservative and based upon current regulations, scientific understanding and methodologies and therefore considered the most appropriate for a conservative CEQA analysis.

CONFLICT WITH AIR QUALITY PLAN

BAAQMD recommends analyzing a project's consistency with current air quality plan control measures. The impact would be significant if the Project would conflict with or obstruct implementation of the regional air quality plan, in this case, the 2010 Clean Air Plan.

Many of the Clean Air Plan's control measures are targeted to area-wide improvements, large stationary source reductions, or large employers and these are not applicable to the proposed Project. However, the Project would also not impede the implementation of control measures. There would be ***no impact*** in relation to inconsistency with the Clean Air Plan.

AIR QUALITY STANDARDS

Construction-Period Criteria Pollutants

Impact Air-1: **Construction Period Dust, Emissions and Odors.** Construction of the Project would result in temporary emissions of dust, criteria air pollutants, and odors that may result in both nuisance and health impacts. Without appropriate measures to control these emissions, these impacts would be considered ***significant***.

Construction of the Project would involve demolition, excavation and site preparation, and building erection. Although these construction activities would be temporary, they would have the potential to cause both nuisance and health-related air quality impacts.

PM_{10} is the pollutant of greatest concern associated with dust. If uncontrolled, PM_{10} levels downwind of actively disturbed areas could possibly exceed State standards. In addition, dust fall on adjacent properties could be a nuisance.

Construction impacts would also be a source of exhaust emissions from construction vehicles, which contribute to regional emission levels.

BAAQMD has developed screening criteria to provide lead agencies and project applicants with a conservative indication of whether a proposed Project could result in potentially significant greenhouse gas emissions impacts. If all of the screening criteria are met by a proposed Project, it can be confidently determined that the Project would be below threshold levels without the need to perform a detailed quantification of the Project's emissions. BAAQMD lists a screening size of 67 acres for a park use, the closest type of use to the proposed Project. The Project site is 15 acres and therefore would not be anticipated to result in emissions of criteria pollutants during the construction period over threshold levels. [6] However, because construction emissions were required to analyze the impact on sensitive users below, the results have been included here as well.

[6] Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, May 2011, Table 3-1.

Construction emissions for the Project were computed using the URBEMIS2007 model. Construction was assumed to occur over an approximately 13-month period (beginning August 2014). The URBEMIS inputs and results are included in Appendix B. Emissions from construction are summarized in **Table 6.4**.

Table 6.4: Average Daily Regional Air Pollutant Emissions, Construction

(Unmitigated Pounds per Day)

Description	ROG	NO_X	PM_{10} *	$PM_{2.5}$ *
Project Construction	9.76	17.17	0.89	0.82
2010 BAAQMD Thresholds	*54*	*54*	*82*	*54*

* Applies to exhaust emissions only, not fugitive dust.

Source: Lamphier-Gregory compiled URBEMIS results included as Appendix B.

Construction-period emissions levels are below BAAQMD thresholds, as presented in Table 6.4. However, BAAQMD recommends implementation of construction mitigation measures to reduce construction-related emissions for all projects, regardless of the significance level of construction-period impacts. These basic measures are included in Mitigation Measure Air-1, below and would further reduce construction-period criteria pollutant impacts.

Demolition and earth-moving activities can also result in fugitive dust, which contributes to particulate matter levels. Unmitigated average daily construction-period dust emissions of 26.30 $PM_{2.5}$ and 140.29 PM_{10} have been calculated using the URBEMIS2007 model (calculation sheets can be found in Appendix B). BAAQMD does not have a threshold of significance for fugitive dust impacts, but instead regards fugitive dust impacts as mitigated if appropriate management practices are implemented, as outlined in Mitigation Measure Air-1.

Mitigation Measure Air-1: **Basic Construction Management Practices.** The Project shall demonstrate proposed compliance with all applicable regulations and operating procedures prior to issuance of demolition, building or grading permits, including implementation of the following BAAQMD "Basic Construction Mitigation Measures".

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the

California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

The BAAQMD significance thresholds for construction dust impacts are based on the appropriateness of construction dust controls. With implementation of the Basic Construction Mitigation Measures listed in Mitigation Measure Air-1, impacts related to construction period emissions would be considered ***less than significant*** with mitigation. Because construction-period emissions do not exceed applicable criteria pollutant significance thresholds, additional construction mitigation measures would not be required to mitigate impacts.

Air Pollutants from Operational Activities

Impact Air-2: **Operational Emissions.** The Project would result in increased emissions from additional vehicles traveling to the site. However, the Project is below applicable threshold levels and the impact would be considered ***less than significant***.

Emissions from operation of the Project could cumulatively contribute to air pollutant levels in the region. These air pollutants include ROG and NOx that affect ozone levels (and to some degree – particulate levels), and PM_{10} and $PM_{2.5}$.

BAAQMD lists an operational criteria pollutant screening size of 439 acres for a city park use, the closest-related type of use listed to the proposed use. At 15 acres, the proposed Project is well below this screening size and therefore not anticipated to result in emissions of criteria pollutants over threshold levels during operations.[7] Additionally, since the use is existing and the Project is an upgrade only, the majority of projected emissions for such a use would be occurring today and not an effect of the Project. Therefore, the Project would have a ***less-than-significant*** impact on operational criteria pollutants and regional air quality.

Carbon Monoxide

BAAQMD presents the separate operational screening level that localized carbon monoxide concentrations should be studied at affected intersections where traffic is increased to more than 44,000 vehicles per hour (or 24,000 vehicles per hour where mixing is substantially limited, such as in a tunnel). This screening level represents the volume of traffic at which a significant impact related to carbon monoxide would be possible. Based on traffic volumes in the vicinity, it is not anticipated the

[7] Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, May 2011, Table 3-1.

Project will affect intersections of that volume (see Chapter 10 for additional details). Therefore, the impact related to carbon monoxide emissions is less than significant.

EXPOSURE OF SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTION CONCENTRATIONS

For the purpose of assessing impacts of a proposed Project on exposure of sensitive receptors to risks and hazards, the threshold of significance is exceeded when the Project-specific cancer risk exceeds 10 in one million, the non-cancer risk exceeds a Hazard Index of 1.0 (or cumulative risk of 100 in one million or a Hazard Index of 10.0 respectively is exceeded), and/or the annual average $PM_{2.5}$ concentration would exceed 0.3 µg/m^3. Examples of sensitive receptors are places where people live, play or convalesce and include schools, hospitals, residential areas and recreation facilities.

Construction Period Exposure

Impact Air-3: **Construction Period Exposure of Sensitive Receptors.** Construction activities would expose nearby sensitive receptors to toxic air contaminants during the construction period, but the maximum exposure risk would be below the thresholds of significance under BAAQMD criteria for cancer, chronic hazard, and $PM_{2.5}$ exposure. This would be a ***less than significant*** impact.

Due to the proximity of residential properties, which are considered sensitive receptors when it comes to health risks, a Construction Health Risk Assessment was performed (included in Appendix B), utilizing the EPA dispersion model SCREEN3 to determine the potential health risks related to diesel exhaust from construction equipment.

For the maximum exposed individual, including conservative age sensitivity factor of 10 to account for young children, the inhalation cancer risk would be 6.48 in 1 million (compared to a threshold of 10 in 1 million), the maximum chronic hazard index would be 0.037 (compared to a threshold of 1.000) and the annual average $PM_{2.5}$ concentration would be 0.151 µg/m^3 (compared to the threshold of 0.300 µg/m^3). This is conservatively based on unmitigated emissions, not taking into account approximately 5% reductions in exhaust emissions that would result from implementation of basic construction measures included in Mitigation Measure Air-1, above.

There are no known additional construction projects that would take place in the immediate vicinity of the Project site during the Project construction period, so would be no additional cumulative localized construction-period impacts.

Exposure risks for the maximally exposed individual are below threshold levels; therefore, the impact related to construction-period exposure of sensitive receptors would be ***less than significant***.

Operational Period Exposure

Following construction, none of the proposed uses would be considered a significant stationary source of air toxins.[8] There would be ***no impact*** related to the operational period health risks.

[8] Bay Area Air Quality Management District. May 2011. *California Environmental Quality Act Air Quality Guidelines*, p. 4-2.

ODORS

Typical sources of objectionable odors include chemical plants, sewage treatment plants, large composting facilities, rendering plants, and other large industrial facilities that emit odorous compounds.[9] Development of the Project would not include any activities that are typical sources of objectionable odors. Other land uses near the Project area are not those typically associated with objectionable odors. Therefore, the Project would have ***no impact*** in relation to odors.

CUMULATIVE AIR QUALITY IMPACTS

Additional analysis to determine cumulative air quality impacts of the Project is not necessary. In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels at which a Project's individual emissions would be cumulatively considerable. Because the Project emissions during construction and operation would not exceed these thresholds, they would not have a cumulatively considerable effect. There would be no additional significant cumulative air quality impacts.

[9] Bay Area Air Quality Management District. May 2011. *California Environmental Quality Act Air Quality Guidelines*, Table 3-3.

This page intentionally left blank

6

BIOLOGICAL RESOURCES

INTRODUCTION

This chapter provides information on biological resources on the Project site. A discussion of federal, state, and local laws, policies, and regulations that influence the protection of such biological resources is presented.

The discussion and analysis in this chapter is based upon the following reports:

Assessment of Potential Impacts on Biological Resources, Atherton Cartan Field Upgrade Project, Atherton, California prepared by Zander Associates for this analysis dated February 5, 2013. (Included in Appendix C)

Preliminary Arborist Report, Cartan Field Upgrade Project prepared by HortScience, Inc. for this analysis dated February 2013. (Included in Appendix C)

ENVIRONMENTAL SETTING

VEGETATION

The majority of the Project site consists of field turf, surfaced tracks, and courts. There are planted coast redwood (Sequoia sempervirens) and coast live oak (Quercus agrifolia) trees around the perimeter and rows of redwood trees separating the tennis courts from the athletic fields. Some ruderal grassland vegetation is present in the northwestern corner, between the track field and El Camino Real, but no native habitats occur on the site.

WILDLIFE

Wildlife species expected to utilize the area include animals that are adapted to urban environments; able to tolerate disturbances, typically generalists, and capable of utilizing the limited food sources available, such as garbage and horticultural plants and their fruit. These species include raccoon (Procyon lotor), Norway rat (Rattus norvegicus), Virginia opossum (Didelphis virginiana), and a variety of birds that are commonly found in urban areas, such as; common crow (Corvus brachyrhynchos), northern mockingbird (Mimus polyglottos) house finch (Carpodacus mexicanus), dark-eyed junco (Junco hyemalis), western scrub jay (Aphelocoma californica), and Anna’s hummingbird (Calypte anna).

The coast redwood and coast live oak trees lining the Project site and around the tennis courts could provide suitable nesting habitat for raptors such as Cooper's hawk (Accipiter cooperi) or red-shouldered hawk (Buteo lineatus), which are somewhat tolerant of disturbance and human presence.

WETLAND OR RIPARIAN

There are no wetland or riparian areas on the Project site. Atherton Channel, which is adjacent to the northern boundary is concrete lined and does not support in-channel vegetation. Coast live oak and ornamental trees have been planted outside the banks, creating a relatively dense canopy but no native riparian species are present. This channel begins in Woodside, south of I-280, and exists mostly of engineered channels and underground storm drains; only small reaches in the headwaters remain as open channels.

SPECIAL STATUS SPECIES

The CNDDB has occurrence records for several special status species within a 3-mile radius of the Project site. Many of these occurrences are historical and are presumed extirpated (meaning removed/destroyed), or are species that are restricted to specific habitats not present on the site. No occurrences are recorded on the Project site.

There is one species, San Francisco garter snake (Thamnophis sirtalis tetrataenia) that is shown as being near the Project site but the exact location information is suppressed in the CNDDB. The Department of Fish and Wildlife was contacted to get more information about this record and stated that all of the San Francisco garter snake occurrences in the Atherton vicinity are west of I-280, in the foothills, and that the closest known location to the Project site is a little over four miles to the south southwest. This information, coupled with the fact that there is no suitable aquatic habitat on or nearby the Project site make it highly unlikely that San Francisco garter snake are present in the area.

The California red-legged frog (Rana draytonii) has been found in the upper reaches of Atherton Channel near Bear Gulch Reservoir. This is a little over two miles from the Project site and in an area where the creek consists of a non-engineered open channel. It is unlikely that CRLF would disperse downstream into the concrete-lined reaches of Atherton Channel as there is no natural substrate or vegetation to provide cover or prevent desiccation (drying). Also, the channel is surrounded by development and there is little if any habitat away from the channel to which frogs would disperse. There is no suitable breeding or other aquatic habitat for CRLF on the Project site. Therefore, CRLF are presumed absent from the site.

California tiger salamanders (CTS) are known to occur in San Francisquito Creek, approximately 1.5 miles south of the Project site. While the Project site is within the distance range that CTS will travel away from a breeding area to aestivate, there is dense urban development between the creek and the site that would prevent this migration. Additionally, there is no breeding habitat for CTS on the Project site and suitable upland habitat is extremely limited. Therefore CTS are highly unlikely to be present on the site. Similarly, the western pond turtle (Emys marmorata) is known to occur in San Francisquito Creek but is not likely to move far away from the channel due to the amount of surrounding development. There is no suitable habitat for western pond turtle in the concrete-lined sections of Atherton Channel adjacent to the Project site and therefore they are not likely to be present in the area.

No special status plant species are expected to occur on the Project site. Recorded occurrences of lost thistle (Cirsium praeteriens) and San Mateo thorn-mint (Acanthomintha duttonii) within close proximity are historical. Lost thistle is now presumed extinct and the closest San Mateo thorn-mint occurrence is presumed extirpated due to urban development. Other special status plants known to occur in the vicinity are found in habitats that are not present on the Project site. The amount of development and disturbance on the site precludes the establishment of native plants, including special status species.

The large coast redwood and coast live oak trees surrounding the Project site and around the tennis courts could provide suitable nesting habitat for a variety of birds, including Cooper's hawk, other raptors, and migratory birds that tolerate disturbance and human activity. Active nests of these species are protected under the Migratory Bird Treaty Act and the California Fish and Game Code. The Migratory Bird Treaty Act (16 USC 703) prohibits the taking, hunting, killing, selling, purchasing, etc. of migratory birds, parts of migratory birds, and their eggs and nests. As used in the act, the term "take" is defined as meaning, "to pursue, hunt, capture, collect, kill or attempt to pursue, hunt, shoot, capture, collect or kill, unless the context otherwise requires." Most native bird species within the study area are covered by this act. The California Fish and Game Code (Section 3511) also provides protection for certain species as listed in the Section. Section 3503.5 of the Fish and Game Code specifically protects the nests and eggs of birds-of-prey, including Cooper's hawk.

REGULATORY SETTING

FEDERAL

Federal Endangered Species Act

The federal Endangered Species Act (ESA) protects plant and wildlife species that are listed as threatened or endangered or proposed for such listing. As a fundamental element of this protection, Section 9 of the ESA prohibits killing, harming, or otherwise “taking” listed animal species. Taking includes such destruction or significant alteration of habitat that actually kills or injures listed animals. Sections 7 and 10 of the Act authorize the U.S. Fish and Wildlife Service (or, in some instances the National Marine Fisheries) to allow limited take of listed species incidental to otherwise lawful activities (e.g. development of land) provided that the species is not jeopardized and the impacts of the take are mitigated. The ESA does not prohibit the taking of listed plants on private land, but does provide for penalties if such plants are destroyed or removed in violation of state law. With respect to species proposed for listing, the ESA calls on federal agencies to confer with the USFWS if their actions may affect any such species.

For projects involving a federal action that may affect listed species, the federal authorizing agency is required to enter into a consultation process with the USFWS under Section 7 of the ESA. Under Section 7, the federal agency conducting, funding, or permitting an action (the lead federal agency) must consult with USFWS, as appropriate, to ensure that the proposed action will not jeopardize endangered or threatened species or destroy or adversely modify designated critical habitat. For projects without federal involvement on non-federal lands, a mechanism for incidental take of listed species along with assurances of long-term habitat protection is provided through Section 10 of the ESA. Section 10 (a)(1)(B) permits for take of listed species can be issued by the USFWS, typically through the applicant's preparation and implementation of a Habitat Conservation Plan (HCP).

Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA; 16 U.S.C., §703, Supp. I, 1989) prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The trustee agency that addresses issues related to the MBTA is the USFWS. Migratory birds protected under this law include all native birds and certain game birds (*e.g.*, turkeys and pheasants; *Federal Register* 70(2):372-377). This act encompasses whole birds, parts of birds, and bird nests and eggs. The MBTA protects active nests from destruction and all nests of species protected by the MBTA, whether active or not, cannot be possessed. An active nest under the MBTA, as described by the Department of the Interior in its 16 April 2003 Migratory Bird Permit Memorandum, is one having eggs or young. Nest starts, prior to egg laying, are not protected from destruction.

Nearly all local native bird species are protected by the MBTA.

STATE

California Endangered Species Act

The California Endangered Species Act (CESA, Fish and Game Code of California, Chapter 1.5, Sections 2050-2116) prohibits the take of any plant or animal listed or proposed for listing as rare (plants only), threatened, or endangered. In accordance with the CESA, the CDFG has jurisdiction over state-listed species. The CDFG regulates activities that may result in "take" of individuals listed under the Act (*i.e.*, "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of "take" under the Fish and Game Code. The CDFG, however, has interpreted "take" to include the "killing of a member of a species which is the proximate result of habitat modification."

California Fish and Game Code

The California Fish and Game Code includes regulations governing the use of, or impacts to, many of the state's fish, wildlife, and sensitive habitats.

Certain sections of the Fish and Game Code describe regulations pertaining to certain wildlife species. For example, Fish and Game Code §§3503, 2513, and 3800 (and other sections and subsections) protect native birds, including their nests and eggs, from all forms of take. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFG. Raptors (*i.e.*, eagles, falcons, hawks, and owls) and their nests are specifically protected in California under Fish and Game Code §3503.5. Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Non-game mammals are protected by Fish and Game Code §4150, and other sections of the Code protect other taxa.

The CDFG also exercises specific authority over rivers, streams and lakes under California Fish and Game Code §1602. Under this section, those planning activities that will substantially divert, obstruct, or change the natural flow of a river, stream or lake, substantially change the bed, channel, or bank of a river, stream or lake, or use material from a streambed must first notify the CDFG and, if the CDFG identifies and existing fish or wildlife resource that would be affected, then obtain (through negotiation or arbitration) a streambed alteration agreement from the CDFG. The type of activities regulated under §1602 include re-channeling and diverting streams, stabilizing banks, implementing flood control projects, crossings of rivers or streams (including bridges and culverted crossings), diverting water, damming streams, mining gravel, and logging operations.

LOCAL

Atherton Heritage Tree Ordinance

Chapter 8.10 of the Atherton Municipal Code addresses removal and damage to heritage trees in the town. The relevant portions of this chapter and related portions of other chapters are excerpted below:

8.10.020 Definitions.

A. "Heritage tree" means either:

1. A tree, located in the tree preservation area, or a native oak tree (Quercus lobata, Quercus agrifolia or Quercus douglasii) located anywhere on a lot, which has a trunk circumference of forty-eight inches or more, when measured forty-eight inches above the natural grade;

2. A tree so designated by the city council, based upon findings that the particular tree is unique and of importance to the public due to its unusual age, appearance, location or other factors;

3. The trees listed below shall not be classified as heritage trees:

Acacia baileyana—Bailey Acacia

(Mimosa)

Acacia decurrens—Green Wattle

Acacia melanoxylon—Black Acacia

Ailanthus altissima—Tree of Heaven

B. "Tree preservation area" means the area outside the building area of the lot, as defined in Section 17.60.020 of this code.

C. "Damage to a heritage tree" means any action, in the judgment of the building official or town arborist, which will cause damage to its health including, by way of example, but not limited to, excess pruning, topping, cutting, girdling, poisoning, over-watering, unauthorized relocation or transportation of a tree, or trenching, excavating, altering the grade, compaction or paving near the tree. (Ord. 533 § 1, 2002: Ord. 462 § 1(B), 1991: Ord. 444 § 2, 1989)

8.10.030 Prohibitions and protections.

A. No person shall remove a heritage tree unless a permit has first been issued in accordance with Section 8.10.040.

B. All heritage trees must be shown and designated on every plot map that may be required by the town in connection with any application for subdivision, variance, use permit, or building permit. In addition, a heritage tree protection and preservation plan may be required with each application. The heritage tree protection and preservation plan shall be prepared by a certified arborist to assess impacts to trees, recommend mitigation to reduce impacts to a less than significant level and identify construction guidelines to be followed through all phases of a construction project. Detailed standards and specifications for the implementation of a heritage tree protection and preservation plan can be found in the town's current tree preservation guidelines, standards and specifications.

C. It is unlawful for any person to damage or harm a heritage tree by any means whatever, including, without limitation, those actions defined in Section 8.10.020(C).

D. The provisions of this chapter shall not be deemed to repeal or otherwise affect the provisions of Chapter 8.08 of this code, relating to dead or dangerous trees. (Ord. 547 § 1, 2004; Ord. 533 § 2, 2002: Ord. 522 § 1, 2001; Ord. 444 § 3, 1989)

17.60.020 Definitions.

"Main building area" (front, interior side, street side, and/or rear) of a lot is the horizontal plane between the minimum setbacks of the respective yard.

[Per section 17.36.040, the setbacks for the PFS zone are 60 feet at the front and rear yards and 50 feet at the side yards.]

15.32.100 Threshold of significance for the removal of heritage trees.

The city council declares that the removal of the following heritage trees could potentially have a significant impact on the environment and that an initial study and mitigated negative declaration or environmental impact should be prepared:

A. More than two heritage trees on parcels of land with an area less than one acre. The removal of two or fewer heritage trees is exempt from further environmental review.

B. More than five heritage trees on parcels of land with an area of one acre, but less than two acres. The removal of five or fewer heritage trees is exempt from further environmental review.

C. More than seven heritage trees on parcels of land with an area greater than two acres. The removal of seven or fewer heritage trees is exempt from further environmental review.

D. More than three heritage trees within a grove, screen, stand or closely planted area. The removal of three or fewer heritage trees in such situation is exempt from further environmental review.

The applicable environmental determination shall be valid for a period of five years.

In compliance with the California Environmental Quality Act (CEQA), the city council finds that heritage trees located outside of the tree preservation area can be removed as a matter of right and that such removal is therefore considered to be a ministerial act, statutorily exempt from CEQA, and the city council further finds that dead or dangerous heritage trees may be considered categorically exempt from CEQA. (Ord. 545 § 2, 2003)

IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

The California Environmental Quality Act (CEQA) and the CEQA Guidelines provide guidance in evaluating project impacts and determining which impacts will be significant. CEQA defines "significant effect on the environment" as "a substantial adverse change in the physical conditions which exist in the area affected by the proposed Project." Under CEQA Guidelines section 15065(a)(1) and Appendix G, a project's effects on biotic resources may be significant when the project would:

1. have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory

2. have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service

3. have a substantial adverse effect on any riparian habitat or other sensitive natural community (*e.g.*, oak woodland) identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service

4. have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act

5. 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

6. conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance

7. conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan

COMMON PLANT COMMUNITIES / WILDLIFE HABITAT

The Project will not remove any native habitats or sensitive natural communities. There would be ***no impact*** in this regard.

SPECIAL STATUS SPECIES AND HABITAT

No special status species are expected to occur on the Project site or be associated with the reach of Atherton Channel immediately adjacent to the site. There is a potential for migratory birds and other birds protected under the California Fish and Game Code and Migratory Bird Treaty Act to nest in the coast redwood and coast live oak trees surrounding the site and around the tennis courts. Most of these trees will remain, but active nests could be affected by construction if activities are conducted during the breeding season.

Impact Bio-1: **Disturbance of Nesting Birds.** Construction activities could adversely affect nesting birds protected by the Migratory Bird Treaty Act and/or Fish and Game Code of California. This is a ***potentially significant*** impact.

The federal Migratory Bird Treaty Act and Fish and Game Code of California protect special-status bird species year-round, as well as their eggs and nests during the nesting season. The list of migratory birds includes almost every native bird in the United States. On-site or adjacent trees could be used by protected birds.

Mitigation Measure Bio-1: **Pre-Construction Nesting Bird Survey.** Within 15 days in advance of any tree removal or ground-disturbing activity that will commence during the breeding season (February 1 through August 31), a qualified wildlife biologist will conduct pre-construction surveys of all trees in the vicinity of the planned activity.

If pre-construction surveys indicate that no nests of protected birds are present or that nests are inactive or potential habitat is unoccupied, no further action is required.

If active nests of protected birds are found during a pre-construction survey, then avoidance procedures should be developed in consultation with the Department of Fish and Wildlife. Avoidance measures could include establishment of construction buffers (up to several hundred feet in the case of raptors), or seasonal avoidance. If buffers are established, a no disturbance zone should be enforced around active nests for the duration of the breeding season or until a qualified biologist determines that all young have fledged. Once the young have fledged, tree removal or construction activities within the buffer zone can resume. The size of the buffer zone should take into account baseline noise and human disturbance levels at the site, screening between the nest and the construction area, and sensitivity of the identified nesting species.

Pre-construction surveys are not required for construction activities scheduled to occur during the non-breeding season (August 31 through January 31).

Construction activities commencing during the non-breeding season and continuing into the breeding season do not require surveys (as it is assumed that any breeding birds taking up nests would be acclimated to Project-related activities already under way). Nests initiated during construction activities would be presumed to be unaffected by the activity, and a buffer zone around such nests would not be necessary. However, a nest initiated during construction cannot be moved or altered.

With implementation of Mitigation Measure Bio-1, which requires a nesting survey close to initiation of construction activities, the impacts on special status species or their habitat would be ***less than significant with mitigation***.

No other potential impacts on biological resources are expected to result from construction of the Project.

WETLANDS / RIPARIAN HABITAT

There are no wetland or riparian areas on the Project site. Atherton Channel is adjacent to the northern boundary, but is concrete-lined and does not support in-channel vegetation. There are no native riparian species present on the banks. There would be ***no impact*** with regard to wetland or riparian habitat.

WILDLIFE CORRIDORS

The Project site is currently developed and is situated within a highly urbanized area; it does not serve as a wildlife corridor. There would be ***no impact*** to wildlife corridors.

PLAN AND POLICY CONFLICTS

There is no Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan that covers the Project site. The Project would have a significant environmental impact if it were to conflict with any local policies or ordinances protecting biological resources. The Town of Atherton Heritage Tree Ordinance (Section 8.10 of the Municipal Code) is applicable to the site.

Impact Bio-2: **Removal of Trees.** Construction of the Project as proposed would necessitate removal of mature trees on the site. However, these trees are not protected under the Town of Atherton municipal code and are not otherwise special-status. This is a ***less than significant*** impact.

According to the Arborist Report (Appendix C), all of the trees have trunk diameters smaller than 48 inches and therefore do not qualify as heritage trees under the Town's Heritage Tree Ordinance. It should be noted that the majority of trees within the site's "tree preservation zone," defined as the area in the property's setbacks, are proposed to be retained under the plan.

The Arborist Report (Appendix C) includes recommendations for successful preservation of these trees during design, pre-construction, construction and maintenance activities.

As implied under other items above, the trees at the site are neither endangered or special-status from a state and federal biological standpoint. Potential impacts related to disturbance of nesting birds in the trees on site are addressed under Impact and Mitigation Measure Bio-1 above.

The impact related to removal of trees on the site is ***less than significant***.

However, it should be noted that the boundary trees are used to screen the site for aesthetic purposes and that the trees along Alejandra Avenue and El Camino Real have the potential to experience die-off following development if not properly protected. An Arborist Report was prepared for the project, which recommended Tree Preservation Guidelines to increase tree survival.

Mitigation Measure

Bio-2: **Tree Preservation.** The Project will comply with Tree Preservation Guidelines as outlined in the Arborist Report and excerpted as follows:

The goal of tree preservation is not merely tree survival during development but maintenance of tree health and beauty for many years. Trees retained on sites that are either subject to extensive injury during construction or are inadequately maintained become a liability rather than an asset. The response of individual trees will depend on the amount of excavation and grading, the care with which demolition is undertaken, and the construction methods.

The following recommendations will help reduce impacts to trees from development and maintain and improve their health and vitality through the clearing, grading and construction phases.

<u>Design Recommendations</u>

1. Establish vertical and horizontal elevations of all trees identified for preservation and plot trees on all plans. Forward these to the Project Arborist to review impacts to trees.

2. Any changes to the plans affecting the trees shall be reviewed by the Project Arborist with regard to tree impacts. These include, but are not limited to, demolition plans, utility and drainage plans, grading plans, and landscape and irrigation plans.

3. Tree Preservation Guidelines, prepared by the Project Arborist, should be included on all plans.

4. Design parking area and drive aisle to minimize impacts to tree roots. Where possible, shift planting peninsulas to be adjacent to mature trees to increase rooting area and minimize root loss.

5. A Tree Protection Zone shall be established around each tree to be preserved. For design purposes the Tree Protection Zone shall extend to the tree's dripline or, where hardscape encroaches on the Tree Protection Zone, to the edge of proposed hardscape location.

6. Significant vertical elevation changes (anything greater than 4") within the Tree Protection Zone can be damaging to trees. To minimize root damage, consider alternative construction methods for installing hardscape such as suspended slab, reduced curb, etc.

7. No trenching, excavation, construction or storage of materials shall occur within the Tree Protection Zone. No underground services including utilities, sub-drains, water or sewer shall be placed in the Tree Protection Zone. Spoil from trench, footing, utility or other excavation shall not be placed within the Tree Protection Zone, either temporarily or permanently.

8. Irrigation systems must be designed so that no trenching will occur within the Tree Protection Zone.

9. Any herbicides placed under paving materials must be safe for use around trees and be labeled for that use.

10. As trees withdraw water from the soil, expansive soils may shrink within the root area. Therefore, foundations, footings and pavements on expansive soils near trees should be designed to withstand differential displacement.

11. Do not apply lime to soil for construction purposed within 50' of the driplines of trees. Lime is toxic to tree roots.

Pre-Construction Treatments and Recommendations

1. The construction superintendent shall meet with the Project Arborist retained for construction monitoring before any work begins, including demolition, to discuss work procedures and tree protection.

2. Fence all trees to be retained to completely enclose the Tree Protection Zone prior to demolition, grubbing or grading. Fences shall be 6' high chain link, mounted to steel posts firmly driven into the ground or on stanchions fastened securely with rebar staples 12" deep, as required by the Town of Atherton. Fences are to remain until all grading and construction is completed.

3. Irrigate coast redwoods identified for preservation along El Camino Real and Alejandra Ave. before, during, and after construction to promote root regeneration and minimize decline in tree condition. The goal of irrigation is to wet the top 24"-36" of soil within the Tree Protection Zone, allowing it to dry in between irrigations. Irrigate trees every two to three weeks until the rainy season begins.

4. Trees identified for preservation may require pruning to provide construction clearance. All pruning shall be completed by a Certified Arborist or Tree Worker and adhere to the latest edition of the ANSI Z133 and A300 standards as well as the Best Management Practices -- Tree Pruning published by the International Society of Arboriculture.

5. Trees to be removed shall be felled so they fall away from the Tree Protection Zone and avoid pulling and breaking roots of trees to remain. If roots are entwined, the Project Arborist may first require severing the major woody root mass before extracting the trees or grinding the stump below ground.

6. Any work within the Tree Protection Zone shall use the smallest equipment possible and operate from outside the Tree Protection Zone. The Project Arborist should monitor all operations expected to encounter roots within the Tree Protection Zone.

7. Prior to excavation for underground foundations/footings/walls, trees may require root pruning outside the Tree Protection Zone by cutting all roots cleanly to the depth of the excavation. Roots shall be cut by manually digging a trench and cutting exposed roots with a sharp saw or other approved root pruning equipment. The Project Arborist will identify where root pruning is required and monitor all root pruning activities.

Recommendations for Tree Protection During Construction

1. Prior to beginning work, the contractors working in the vicinity of trees to be preserved are should meet with the Project Arborist at the site to review all work procedures, access routes, storage areas, and tree protection measures.

2. No grading, construction, demolition or other work shall occur within the Tree Protection Zone. Any modifications must be approved and monitored by the Project Arborist.

3. Demolition, grading and construction near mature trees shall be done carefully to avoid tearing tree roots in the process. Removal of soil around roots in the Tree Protection Zone should be performed by hand. Roots that extend into proposed development should be pruned clean and square at undamaged tissue.

4. If injury should occur to any tree during construction, it should be evaluated as soon as possible by the Project Arborist so that appropriate treatments can be applied.

5. Fences are to remain until all site work has been completed. Fences may not be relocated or removed without prior review and approval by the Project Arborist.

6. No excess soil, chemicals, debris, equipment or other materials shall be dumped or stored within the Tree Protection Zone.

7. Any additional tree pruning needed for clearance during construction must be performed by a Certified Arborist and not by construction personnel.

Maintenance of Impacted Trees

Trees preserved at the Cartan Field site will experience physical environment different from that pre-development. As a result, tree health and structural stability should be monitored.

Occasional pruning, fertilization, mulch, pest management, replanting and irrigation may be required. In addition, provisions for monitoring both tree health and structural stability following construction must be made a priority. As trees age, the likelihood of branches or entire trees failing will increase. Therefore, annual inspection for hazard potential is recommended.

Implementation of Mitigation Measure Bio-2 will further reduce an already ***less than significant*** impact and help ensure the survival of boundary screening trees.

This page intentionally left blank

7

CULTURAL RESOURCES

INTRODUCTION

This chapter describes existing cultural resources at the Project site and describes whether implementation of the Project would cause a substantial adverse change in the significance of a historic or archaeological resource (as defined in Section 106 of the National Historic Preservation Act and Section 15064.5 of the CEQA Guidelines), directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or result in the disturbance of any human remains, including those interred outside of formal cemeteries.

This chapter utilizes information from the following reports prepared for this Project or analysis:

Cultural Resources Assessment Report dated May2013, prepared for this analysis by William Self Associates (included as Appendix D). This report is based upon a Northwest Information Center records search, archaeological field survey, historic structure assessment, and additional historic research.

ENVIRONMENTAL SETTING

Paleoenvironment

The dominant feature of the paleoenvironment was San Francisco Bay and its adjoining marshlands. During the last glacial maximum, the San Francisco Bay was a broad inland valley, referred to as the Franciscan Valley. The runoff from the Sacramento and San Joaquin Rivers converged to form the California River that flowed through the Carquinez Strait, into the Franciscan Valley. Runoff from smaller streams and rivers draining this valley merged into the river, and emptied into the Pacific Ocean near the current location of the Farallon Islands. The melting of the ice sheets and concurrent rising of the oceans pushed the California coastline eastwards. Between 11,000 and 8,000 calibrated years before present, rising sea levels inundated the lower areas of the Franciscan Valley and California River. Sediments carried by the California River were deposited on the floor of the valley.

Studies within the Bay region confirm that several late Pleistocene and early Holocene land surfaces were covered by alluvium that was generally deposited within the last 6,000 years. Archaeological deposits older than 6,000 years would likely have been inundated by sea level rise and/or buried by sediment deposition.

The other important feature of the local paleoenvironment was San Francisquito Creek. The creek drains west to east, beginning near the crest of the peninsula opposite the origin of the San Gregorio River. The extensive watershed has produced a large alluvial fan that extends more than 6 miles. The watershed provided a rich habitat of fauna and flora species, which accounts for the density of human habitation along its course.

Prehistoric Background

The majority of data gathered in the Bay Area is limited to a late Holocene (post-4000 calibrated years before present), although the human occupation is assumed to have had its origin earlier. This dearth of early archaeological remains is likely the result of the loss of coastal and bay margin land surfaces dating from the terminal Pleistocene into the middle Holocene due to sea-level rise and sedimentation that has deeply buried any early archaeological sites. As a result, the San Francisco Bay Area prehistory prior to the late Holocene is not well documented.

Archaeology of the Mid-Peninsula Region

The Project area lies near an unidentified ancient watercourse that may have originally been part of a complex of creeks within the San Francisquito Creek watershed.

The most notable archaeological investigations in the area have occurred along the San Francisquito Creek drainage area, which lies just south of the Project area. These archaeological sites reveal a long sequence of prehistoric occupation beginning around 4,000 years ago in the Early period and extending into the Late period. Excavation projects have documented a dense occupation of the region during the late Holocene, when a wide range of resources from terrestrial and bay environs were exploited. They also show that many sites still lie buried beneath alluvial sediments.

Ethnographic Background

Costanoan-speaking tribal groups occupied the area from the Pacific Coast to the Diablo Range and from San Francisco to Point Sur. Modern descendants of the Costanoan prefer to be known as Ohlone. The two terms (Costanoan and Ohlone) are used interchangeably in much of the ethnographic literature.

At the time of initial contact with European explorers (1772), the Project area was in the area occupied by two Costanoan-speaking Ohlone groups: the Puichon, a tribal group located between lower San Francisquito Creek and lower Stevens Creek, (an area encompassing today's cities of Menlo Park, Palo Alto and Mountain View), and the Lamchin, located to the north of San Francisquito Creek.

The Ohlone, who lived throughout the Bay Area, subdivided themselves into smaller village complexes or tribal groups. These groups were independent political entities, each occupying specific territories defined by physiographic features. Each group controlled access to the natural resources of the territories. Although each tribal group had one or more permanent villages, their territory contained numerous smaller campsites used as needed during a seasonal round of resource exploitation.

The arrival of the Spanish led to the rapid demise of native California populations. Diseases, declining birth rates, and the effects of the mission system served to eradicate the aboriginal life ways.

Historical Background

Missions and Ranchos

Contact between Spanish explorers and the native people of the bay region was initiated by the 1769 expedition led by Captain Gaspar de Portolá, followed by numerous other explorations of the area.

The first mission in the San Francisco Bay Area was established in San Francisco with the completion of Mission San Francisco de Asis (Mission Dolores) in 1776. Mission Santa Clara de Asis, located

forty miles south of San Francisco, was established just a year later. Mission San Jose, located in modern Fremont, would not be established for another twenty years.

Following Mexican independence from Spain in 1821, control of Spain's North American colonial outposts was ceded to the Republic of Mexico. Californians could now trade with foreigners and, further, foreigners could own property once they had been naturalized and converted to Catholicism. These new regulations made California more attractive to permanent settlers and, not surprisingly, the numbers of Mexican and non-Mexican born immigrants continued to increase during this period.

Former mission lands were parceled out in large land grants. Throughout the state this meant that the agricultural economy that was once limited to the missions and pueblos quickly encompassed a growing number of cattle ranches run by men interested primarily in the hide and tallow trade.

Modern-day Atherton is situated on land once part of the vast Rancho de las Pulgas holdings.

As overland migration of American settlers from the east into Alta California became more common in the 1840s, relations between the United States and Mexico became strained, with war breaking out by 1846. Skirmishes between the two sides continued until California was officially annexed to the United States in 1848.

California statehood and the end of Mexican rule ushered in yet another body of laws that governed life in this rapidly changing landscape. Although Mexican citizens had been assured of their property rights after annexation, the frenzy of the gold rush made northern California's vast rancho lands irresistible to new arrivals, who often squatted on property that they did not own.

Development of the Vicinity

A petition for settlement of the Rancho de las Pulgas title was filed by Maria Soledad de Ortega (the widow of one of Arguello's sons), her two sons, and S.M. Mezes, a lawyer who had a stake in the land in 1852. It stated that the Arguello family was granted the property as early as 1795, although preservation of land titles was hardy a concern at that early date when the land was worth very little. In particular, the western boundary of Las Pulgas was subject to extensive litigation, and the patent settling ownership was not issued until 1856. The rancho was then sold off by Maria, her sons, and S.M. Mezes, the land's grantees, over the next several decades.

19th century residents in the Project area were somewhat isolated from early population centers such as San Francisco due to the region's topography as well as the primitive state of early transportation. Overland travelers relied on the well-worn path of El Camino Real until train service between San Francisco and San Jose was established in 1864. The rail line ran parallel to El Camino Real and encouraged development east of El Camino near the new train depots.

An 1897 map confirms that at the turn-of-the-century, settlement in the vicinity of the Project area was centered along El Camino Real and the rail line that ran just east of El Camino in the vicinity of the Project area. At the time there were no structures depicted in the Project area, and with the exception of the communities of Palo Alto and Menlo Park, settlement remained sparse in the region.

The lack of development in the immediate vicinity was due, in part, to the fact that the Project area had become part of the large estate (over 400 acres) purchased by Faxon Dean Atherton in 1860. Atherton named the estate Valparaiso Park after his wife's Chilean birthplace and built a large home near the intersection of Elena and Isabella avenues (named after his daughters) to the west of the current Project area.

Twentieth Century Expansion, the Suzanne Perry Stables and Farm, and Phar Lap the Racehorse

When the town of Atherton was incorporated in 1923, it included the current Project area along El Camino Real. The Project area was located within the northeastern portion of the 30.73 acres owned by Suzanne Perry, who was prominent in California horse racing circles. The Perry ranch was dominated by a large racetrack with several large barns, outbuildings, and at least one stable constructed along the west edge of the property.

Perry and her property became inextricably linked with racing legend when Phar Lap, the most popular Australian racehorse of the era, died at her ranch on April 5, 1932. The colt was born in New Zealand in October 1926. While he was owned by American David J. Davis, Davis did not initially think much of the horse and leased him to Australian trainer Harry Telford, who had chosen him based on his breeding. As a 2-year-old, Phar Lap won just one out of five races, but by the time he was three he had filled out considerably, and won thirteen of twenty starts, coming in third at the Melbourne Cup in 1929. As a 4-year-old, Phar Lap dominated the field and captured Australia's collective imagination at a time when the country was hard hit by the Depression and was looking for a source of national pride. That year he won fourteen of sixteen starts and came in second in the remaining two races.

Phar Lap's success also brought threats, presumably by people with a financial stake in removing him. These culminated November 1, 1930, when some people in a car shot at him and missed. He went on to win the Melbourne Stakes that afternoon.

As a five-year-old Phar Lap sealed his legendary status, winning eight of nine races. Davis, the horse’s owner, grew increasingly frustrated with the weights being assigned to Phar Lap and considered opportunities outside of Australia. The horse's first and last race in North America was in 1932 at Aqua Caliente just over the Mexican border in Tijuana. Phar Lap endured an extensive sea voyage and a 600-mile drive simply to reach the track. At the time, Agua Caliente was the highest stakes race in North America. Phar Lap won the race by two lengths, set a track record, and beat eleven of the best American horses, including Kentucky Derby winner Reveille Boy.

Sixteen days later, Phar Lap was dead on Suzanne Perry's ranch in Atherton, where he had been brought to rest while Davis decided on his next move. While he simply may have died of exhaustion and overwork, rumors swirled about the cause of his death, and continue to do so to this day. Some believed he had been intentionally poisoned, others that he had ingested arsenic applied to an orchard near Perry's ranch, while others believed that arsenic, used in popular horse liniments of the day, had slowly built up to toxic levels in his system. Still others thought he had ingested damp or moldy feed that caused acute intestinal distress.

After at least one autopsy, much of Phar Lap’s remains were sent to back to Australia. Today, his hide is mounted and prominently displayed in the Melbourne Museum. His 14-pound heart is kept at the National Institute of Anatomy in Canberra, his brain is in Sydney, and his skeletal remains were given to the National Museum in New Zealand. His internal organs are believed to be buried in a metal box on the former Perry ranch. At the time of his death, Phar Lap was the third-highest stakes winner in the world. He is a national icon in Australia and has been inducted into both the Australia and New Zealand racing halls of fame. Vintage video remains of his racing days, many products bear his name or image, a full-length movie was made about him in 1983, and several books have been published.

In addition to the 30 acres on El Camino Real, the Perry family owned an additional 14 acres along the Alameda de las Pulgas between Atherton Avenue and Polhemus Drive (just over 1.5 miles to the west of the Project area). There is some debate as to whether Phar Lap's remains were originally placed within the Perry property along El Camino, where the horse was boarded, or within the smaller property somewhat removed from Perry's main facility.

The curiosity surrounding Phar Lap's death was peaked once again in 2000, when a new book on Phar Lap was published. It reported that after a prominent veterinarian reexamined the horse's autopsy report he concluded Phar Lap likely died of duodenitis-proximal jejunitis (DPJ), which is caused by a bacterial toxin and was unknown at the time the horse died. This reexamination would not be the last word on Phar Lap's demise, however. The subject was again raised in the fall of 2006, when an Australian scientist tested several hair follicles removed from the horse's hide in the Melbourne Museum. The scientist concluded the level of arsenic present in the hair follicles proved the horse had been administered a "single, fatal dose of arsenic".

The Gilmore Family and Brittany Meadows

A July, 1985, article in The Country Almanac describes the creation of the Brittany Meadows subdivision from the southwestern portion of the land that was once owned by the Perry family along El Camino. A large estate house existed on the property at the time it was acquired by the Gilmore family ca. 1946. In 1964, the old house was moved to Holbrook-Palmer Park and the Gilmore's built their new home. The Gilmore home continued to occupy the 2-acre parcel mentioned above even after the property was subdivided. Mr. Gilmore was the founder of the Gilmore Steel Corporation and the family used the estate as their summer home. Both he and his wife loved horses, and were likely attracted to the amenities, like the open space and large barns that the property offered. Mr. Gilmore drove trotters and played polo, while his wife and daughter bred several well-known horses, including Kentucky Derby and Preakness winner Spectacular Bid. The 1985 article also reported that in addition to building an entrance road and two cul-de-sacs as part of the subdivision project, "two old barns" would have to be removed from the property. It's likely that these two barns were built by Ed and Suzanne Perry and were used as part of their horse training operation and then subsequently used by the Gilmore family. A 1948 aerial photograph depicts several large buildings along the northwest edge of the property, on either side of the one remaining stable that is part of the current Project area.

The article in The Country Almanac also discussed Phar Lap, and his association with the property. The Gilmore's daughter Madelyn Jason was eager to explain that Phar Lap had not died on the portion of the property acquired by the Gilmore family. "Phar Lap, she said, actually died on another property owned by the Perrys a few blocks away. When the Gilmores bought their property from the Perry family in about 1946 it stretched all the way to El Camino Real, Mrs. Jason said," implying he had been stabled and died on the northeastern portion of the property adjacent to El Camino (Henry 1985). The 1985 article was written only two years after the full-length Australian feature film titled "Phar Lap" was released.

Menlo School and College

Menlo School began as a military school, the William Warren School, in 1915. By 1924 the military program had been dropped and the school was known as the Menlo School for Boys, operating as an all boys preparatory school. Later in that decade a two-year college was established as part of the school. By 1949 the name was officially changed to Menlo School and Menlo College. While the school and college continue to share some facilities, they are now independent entities with their own board, administration, and faculty.

As discussed above, the southwestern portion of the Perry property along El Camino was subdivided for residential development, and as a result, the agricultural buildings associated with the former horse property were likely demolished to make way for homes. Eventually, Menlo School and College purchased the northeastern portion of the Perry property and developed sports fields, including a running track, tennis courts, and baseball fields. The maintenance buildings associated with the sports complex, known as Cartan Field, are clustered in the west corner of the parcel and include temporary

structures as well as the stable that was once part of the Perry property. The former stable is now used for storage. Although it was not possible to survey the standing structures on the private residential property that comprises the former Perry horse ranch, the U-shaped stable in the corner of Cartan Field is likely the last standing structure associated with the former horse property. As a result, it has become associated with Phar Lap's brief stay and controversial death in Atherton, making it a destination for visitors with an affinity for the horse. When Australian Prime Minister Bob Hawke travelled to San Francisco in the early 2000's, it was reported that he, "took him on a pilgrimage to Phar Lap's stall," the unassuming stable in the corner of Cartan Field.

REGULATORY SETTING

STATE REGULATIONS (CEQA)

CEQA provides appropriate measures for the evaluation and protection of cultural resources in §15064.5 of the CEQA Guidelines. For the purposes of CEQA, “historical resources” are those cultural resources that are: (1) listed in or eligible for listing in the California Register of Historic Resources (CRHR); (2) listed in a local register of historical resources (as defined in PRC 5020.1(k)); (3) identified as significant in a historical resource survey meeting the requirements of §5024.1(g) of the Public Resources Code; or (4) determined to be a historical resource by a project's lead agency (§15064.5(a)). The subsection further states that “A project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment” (§15064.5(b)).

CEQA applies to effects on archaeological sites (§15064.5(c)). CEQA requires a lead agency to determine if an archaeological cultural resource fits into one of three legal categories (14 CCR §15064.5(c)(1-3)). A lead agency, in this case the Town of Atherton, applies a two-step screening process to determine if an archaeological site meets the definition of a historical resource, a unique archaeological resource, or neither. Prior to considering potential impacts, the lead agency must determine whether a cultural resource meets the definition of a historical resource in §15064.5(a). If the cultural resource meets the definition of a historical resource, it is treated like any other type of historical resource in accordance with §15126.4. If the cultural resource does not meet the definition of a historical resource, then the lead agency applies the second criterion to determine if the resource meets the definition of a unique archaeological resource as defined in §21083.2(g). Should the archaeological site meet the definition of a unique archaeological resource, it must be treated in accordance with §21083.2. If the archaeological site does not meet the definition of a historical resource or a unique archaeological resource, then effects to the site are not considered significant effects on the environment (§15064.5(c)(4)).

Public Resources Code (PRC) §5097.5 provides for the protection of cultural resources. PRC §5097.5 prohibits the removal, destruction, injury, or defacement of cultural features on any lands under the jurisdiction of State or local authorities.

IMPACTS AND MITIGATION MEASURES

CRITERIA OF IMPACT SIGNIFICANCE

Under the CEQA Guidelines, Appendix G – Environmental Checklist Form, a significant impact will occur if the proposed Project would:

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

DISTURBANCE OF HISTORICAL RESOURCES

Impact Cultural-1: **Removal of a Historic Resource, Perry Stable.** The Perry Stable is a historic resource because of its association with the Australian racehorse Phar Lap and his contentious death at the property. The Project would demolish the Perry Stable, resulting in permanent removal of a historic resource. The impact would be ***significant and unavoidable***.

A single, standing historic-age structure identified as the former Perry Stable is located within the Project area

The former Perry Stable is a single-story U-shaped building situated in the west corner of the Cartan Field complex. It is situated among maintenance sheds and is currently used for storage. While its exact date of construction is not known at this time, it is clearly visible in a 1948 aerial photograph of the property, making it at least 65 years old. It was probably constructed in the 1920s, when the Perry family likely built the barns and stables that comprised their horse ranch. Like all of the ranch buildings, it was located along what was the northwest edge of the Perry's acreage. The additional barns and stables that were once associated with the Perry ranch have been demolished as a result of subdivision and development.

While a shed has been added at the rear and there have been some minor modifications to the structure, the building clearly reflects its original use as a stable.

<u>Evaluation of the Perry Stable</u>

The California Register of Historical Resources (CRHR) is the official list of properties, structures, districts, and objects significant at the local, state, or national level. CRHR criteria are similar to National Register of Historic Places criteria, and are tied to CEQA, so any resource eligible for listing under CRHR, is considered an historical resource under CEQA.

Properties that are eligible for the National Register are automatically eligible for the California Register. Properties that do not meet the threshold for the National Register may meet the California Register criteria. Generally, a resource shall be considered by the lead agency to be “historically significant” if the resource meets at least one of the four following criteria for listing on the California

Register of Historical Resources while retaining enough of their historic character or appearance to be recognizable as historical resources and convey the reasons for their significance (i.e. retain integrity):

Criterion 1: Is the resource associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage?

As stated by the National Park Service (NPS), this criterion "recognizes properties associated with single events, such as the founding of a town, or with a pattern of events, repeated activities, or historic trends, such as the gradual rise of a port city's prominence in trade and commerce." When considering a property for significance under this criterion, the associated event or trends "must clearly be important within the associated context: settlement, in the case of the town, or development of a maritime economy, in the case of the port city…Moreover, the property must have an important association with the event or historic trends."

The Perry Stable is the last standing structure from the Suzanne Perry Stables & Farm, an active horse training facility on the Peninsula in the early 20th century. More importantly, the stable is directly associated with the death of Phar Lap, perhaps the most famous thoroughbred racehorse in Australia's history. The association is important not only because the event forms part of Atherton's cultural heritage, but because the disputed cause of the horse's death remains of interest to the Australian people to this day, 80 years after the event occurred. While there were multiple barns and stables on the property during its working years, as the last remaining building from Perry's horse ranch, the stable has become associated with Phar Lap's brief stay and controversial death, making it a destination for visitors with an affinity for the horse and the history of horseracing. As a result, the Perry Stable is recommended as eligible for listing on the CRHR under Criterion 1.

It should be noted that this determination of eligibility is made even though this particular stable cannot be conclusively identified as the specific stable structure where Phar Lap was kept. No conclusive evidence could be found to determine the specific stable or stall. Phar Lap may have been housed at these stables or may have been housed at a different structure on the Perry Stables and Farm properties. The determination of eligibility under this criterion is made based upon the subject stable's status as the last remaining stable from the Perry's horse ranch at the time of Phar Lap's controversial death.

Criterion 2: Is the resource associated with the lives of persons important in our past?

This criterion applies to properties associated with individuals whose specific contributions to history can be identified and documented. The NPS defines significant persons as "individuals whose activities are demonstrably important within a local, state, or national historic context. The criterion is generally restricted to those properties that illustrate (rather than commemorate) a person's important achievements. The persons associated with the property must be individually significant within a historic context." The NPS also specifies that these properties "are usually those associated with a person's productive life, reflecting the time period when he or she achieved significance."

Suzanne Perry, the owner of the stable during its period of significance, was active in the Northern California horse-racing scene in the early 20th century. While she is representative of rural families who settled on the Peninsula in the early 20th century, she is not considered to be a person significant in our past. The Perry Stable is not recommended as eligible for listing on the CRHR under Criterion 2.

Criterion 3: Does the resource embody 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?

Under this criterion, properties may be eligible if they "embody the distinctive characteristics of a type, period, or method of construction, …represent the work of a master, …possess high artistic values, or…represent a significant and distinguishable entity whose components may lack individual distinction."

The Perry Stable was a utilitarian structure built to be part of a working horse ranch. While it's U-shape and layout may be representative of a common building style, it is not an important example of an early 20th century horse stable. The Perry Stable is neither the work of a master, nor does it possess high artistic values and, as a result, the Perry Stable is not recommended as eligible for listing on the CRHR under Criterion 3.

Criterion 4: Has the resource yielded, or may be likely to yield, information important in prehistory or history?

Criterion 4 applies to archaeological resources and consequently is not applicable to this resource.

Integrity

When recommending a resource as being eligible to the CRHR, one must evaluate whether it possesses historic integrity. Historic properties must retain sufficient historic integrity to convey their significance. The California Register recognizes seven aspects or qualities that define historic integrity:

- Location. The place where the historic property was constructed or the place where the historic event occurred.
- Design. The combination of elements that create the form, plan, space, structure, and style of a property.
- Setting. The physical environment of a historic property.
- Materials. The physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.
- Workmanship. The physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.
- Feeling. A property's expression of the aesthetic or historic sense of a particular period of time.
- Association. The direct link between an important historic event or person and a historic property.

To retain historic integrity, a resource should possess several of the above-mentioned aspects. The retention of specific aspects of integrity is essential for a resource to convey its significance.

The Perry Stable retains integrity of location, design, materials, workmanship, and association. It sits in its original location and maintains its original form. One small interior room has been remodeled and a shed has been added to the rear of the building, but the original materials are present throughout much of the structure.

The setting and the feeling of the property have been altered since the 1930s. The stable is no longer part of a ranch complex and is now surrounded by athletic fields. However, many of the large trees near the stable, which formed part of the ranch's setting, are still present along the perimeter of Cartan Field. While the setting and feeling of the property have been somewhat compromised by development, on the whole the stable retains physical integrity and the ability to convey its significance.

The Perry Stable is eligible for listing on the CRHR under Criterion 1 because of its association with the Australian racehorse Phar Lap and its historical integrity.

Because Project plans include the demolition of the historic Perry Stable, a significant impact would occur to the resource.

Mitigation Measure

Cultural-1: **Phar Lap Memorial.** The Project applicant shall fund creation of a memorial to Phar Lap at or near the area occupied by the Perry Stable. Such a memorial should be created with input from the Atherton Planning Department, the Atherton Heritage Association, and the Menlo College and Menlo School.

Through demolition of the Perry Stable, the Project would result in the destruction and removal of a historic resource. While Mitigation Measure Cultural-1 would commemorate this resource, a memorial would not be considered a historic resource. Therefore, even with mitigation, the Project's impact relating to loss of a historic resource would remain ***significant and unavoidable***.

To further characterize the severity of this residual impact, it should be noted that the Perry Stable is identified as historic for its association with the larger property and a historic event that occurred there. The structure cannot be conclusively identified as the specific location of the event nor is the structure itself considered architecturally significant. The structure is not currently publically accessible or viewable from public locations. These facts moderate the characteristic of the loss only without changing the conclusions related to significance.

According to CEQA Section 15126.4, avoidance of historic sites is the preferred approach. Retention of the Perry Stable is explored in Chapter 12 as an alternative to the Project as proposed.

ARCHAEOLOGICAL RESOURCES, GEOLOGIC/PALEONTOLOGICAL FEATURES

A significant impact would occur if ground-disturbing activities (e.g., grading, excavation, drilling, etc.) associated with project construction disturb, damage, or destroy previously unknown buried prehistoric features and deposits that could be considered significant resources. A significant impact would occur if ground-clearing activities (e.g., grading, brush-hogging, mowing, etc.) exposed to erosion, inadvertent damage, or vandalism those buried archaeological features and deposits that could be reconsidered significant resources.

Impact Cultural-2: **Disturbance of Unidentified Paleontological, Prehistoric or Historic Archaeological Resources.** Because of the proximity of the Project to an ancient watercourse, there is a low to moderate possibility that buried archaeological resources may be located during construction activities. Site preparation, grading, and construction activities could adversely impact previously undiscovered paleontological/archeological resources. This is a ***potentially significant*** impact.

A records search conducted by the Northwest Information Center (NWIC) indicated that no archaeological sites have been previously recorded within 1/4-mile of the Project area. However, the

Project area is in a region with important archaeological sites associated with the San Francisquito Creek watershed. Because the Project area is near an ancient watercourse within this watershed, it possesses some potential for buried archaeological deposits.

An intensive pedestrian survey of the Project area by a qualified archaeologist on February 19, 2013 revealed no evidence of the presence of paleontological, prehistoric or historic archaeological material. However, as a developed site, there was very limited visibility of native soils, as imported soil, sod, and various types of solid surfacing cover the majority of site.

Implementation of the following mitigation measure would reduce potential impacts to undiscovered archeological resources to a less-than-significant level under CEQA.

Mitigation Measures

Cultural-2a: **Core Sampling.** Prior to grading or construction activities, the Project applicant shall engage a qualified professional archaeologist to conduct core sampling to determine the presence or absence of subsurface resources. Core sampling shall be limited to areas of proposed subsurface construction and should not exceed the proposed depths of subsurface disturbance that will result due to construction of building and bleacher footings or the pool excavation.

Cultural-2b: **Construction Crew Cultural Resource Training.** Prior to the beginning of construction, the applicant shall engage a qualified professional archaeologist to conduct a cultural resources training session for construction crew members. Information should be provided to construction personnel about the legal requirements relating to the discovery of buried cultural resources or buried human remains, as well as information useful in identifying historic and prehistoric cultural material, and the procedures to follow should cultural resources or buried human remains be encountered during Project excavations.

Cultural-2c: **Construction Activity, Evaluate Find and Implement Mitigation.** In accordance with CEQA Guideline §15064.5 (f), should any previously unknown paleontological, historic or prehistoric resources, including but not limited to charcoal, obsidian or chert flakes, grinding bowls, shell fragments, bone, pockets of dark, friable soils, glass, metal, ceramics, wood or similar debris, be discovered during core sampling, grading, trenching, or other on-site excavation(s), earthwork within 100 feet of these materials shall be stopped until a qualified professional archaeologist has an opportunity to evaluate the significance of the find and suggest appropriate mitigation(s), as determined necessary to protect the resource, as detailed below.

(A) According to CEQA Section 15126.4 avoidance is the preferred mitigation. Since CEQA provisions regarding the preservation of historic sites direct that adverse effects to historic sites shall be avoided, if feasible, the resource shall be protected from damaging effects through avoidance.

(B) Avoidance can include, but is not limited to, the following options:

1. Planning construction to avoid the historic site.

2. Incorporation of sites within parks, green space, or other open space.

3. Capping the historic site with a layer of chemically stable soil before construction. Capping the historic site would include installation of a water permeable protective barrier that is covered with a 3-ft.-thick layer of chemically stable soil before constructing non-intrusive facilities on the site. Excavation for landscaping, irrigation or any other purpose shall be limited to the soil layer above the water permeable protective barrier. If the soil layer cannot accommodate all planned underground utilities, a thicker soil layer may be used to cover the site.

4. Deeding the site into a permanent conservation easement.

(C) If avoidance of any previously undiscovered site is not feasible, data recovery shall be conducted in accordance with an approved Archaeological Data Recovery Plan (ADRP) to mitigate adverse effects to the significance of the site – the area of data recovery being limited to the area of adverse effect. This would fulfill CEQA requirements that the mitigation measure must be "roughly proportional" to the impacts of the Project. Data recovery shall be conducted by a professional archaeologist in compliance with CEQA Guideline Section §15064.5. Once the site has been properly tested, subject to data recovery, or preserved to the satisfaction of the professional archaeologist in compliance with CEQA Guideline §15064.5, the site can be further developed.

Implementation of mitigation measures Culture-2a, -2b and -2c will reduce the impacts associated with possible disturbance of currently unidentified paleontological resources, prehistoric or historic archaeological resources at the Project site to a level of ***less than significant***.

NATIVE AMERICAN HUMAN REMAINS

A significant impact would occur if ground-clearing or ground-disturbing activities associated with site preparation, grading, and construction activities could disturb Native American human remains, including those interred outside of formal cemeteries.

Impact Cultural-3: **Disturbance of Unidentified Native American Human Remains.** Although not anticipated, human remains may be identified during site-preparation and grading activities. The potential to disturb Native American remains is a ***potentially significant*** impact.

A record search of the sacred land file performed by the Native American Heritage Commission (NAHC) failed to indicate the presence of Native American cultural resources in the immediate Project area. Local Native American representatives were contacted in February 2013 to solicit comment on the Project and any additional information the individuals might have regarding cultural resources in the Project area. No responses to those solicitations were received.

Although not anticipated, the potential to uncover Native American human remains exists in locations throughout California. Implementation of the following mitigation measure would reduce potential adverse impacts to human remains.

Mitigation Measure
Cultural-3: **Halt Construction Activity, Evaluate Remains and Take Appropriate Action in Coordination with Native American Heritage Commission.** Section

7050.5(b) of the California Health and Safety code will be implemented in the event that human remains, or possible human remains, are located during Project-related construction excavation. Section 7050.5(b) states:

In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code.

The County Coroner, upon recognizing the remains as being of Native American origin, is responsible to contact the NAHC within 24 hours. The Commission has various powers and duties, including the appointment of a Most Likely Descendant (MLD) to the Project. The MLD, or in lieu of the MLD, the NAHC, has the responsibility to provide guidance as to the ultimate disposition of any Native American remains.

Implementation of Mitigation Measure Culture-3 will reduce the impacts associated with possible disturbance of human remains at the Project site to a level of ***less than significant***.

This page intentionally left blank

8

GREENHOUSE GAS EMISSIONS

INTRODUCTION

This analysis evaluates the greenhouse gas emissions impacts of the Project. The impacts associated with implementation of the Project were evaluated consistent with guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1] See the Thresholds of Significance (p. 6-9) for a discussion of the legal status of BAAQMD Thresholds and Guidelines.

This section utilizes information from the following reports prepared for this Project or analysis:

Emissions Model and Construction Health Risk Assessment Results compiled by Lamphier-Gregory for this analysis in March and April 2012 (included in Appendix B).

ENVIRONMENTAL SETTING

Over the last several decades, evidence of human influences on climate change has become increasingly clear and compelling. There is indisputable evidence that human activities such as electricity production and transportation are adding to the concentrations of greenhouse gases that are already naturally present in the atmosphere. These heat-trapping gases are now at record-high levels in the atmosphere compared with the recent and distant past. Warming of the climate system is well documented, evident from increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level. The buildup of greenhouse gases in the atmosphere is very likely the cause of most of the recent observed increase in average temperatures, and contributes to other climate changes.[2,3]

GREENHOUSE GASES

Carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone (O_3), and water vapor (H_2O) are the principal GHGs, and when concentrations of these gases exceed the natural concentrations in the atmosphere, the greenhouse effect may be enhanced. Without these GHGs, Earth's temperature would

---

[1] Bay Area Air Quality Management District. May 2011. *California Environmental Quality Act Air Quality Guidelines*.

[2] U.S. EPA, 2010, *Climate Change Indicators in the United States*.

[3] "Global climate change" is a broad term used to describe any worldwide, long-term change in the earth's climate.

"Global warming" is more specific and refers to a general increase in temperatures across the earth, although it can cause other climatic changes, such as a shift in the frequency and intensity of weather events and even cooler temperatures in certain areas, even though the world, on average, is warmer.

be too cold for life to exist. CO_2, CH_4, and N_2O occur naturally, as well as through human activity. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely byproducts of fossil fuel combustion, whereas CH_4 results from off gassing associated with agricultural practices and landfills. Man-made GHGs have a much greater heat-absorption potential than CO_2. These include fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6), which are byproducts of certain industrial processes.[4]

Global Warming Potential and CO_2e

The Global Warming Potential (GWP) concept is used to compare the ability of each GHG to trap heat in the atmosphere relative to carbon dioxide (CO_2), which is the most abundant GHG. CO_2 has a GWP of 1, expressed as CO_2 equivalent (CO_2e). Other GHGs, such as CH_4 and N_2O are commonly found in the atmosphere at much lower concentrations, but with higher warming potentials, having CO_2e ratings of 21 and 310, respectively. Trace gases such as chlorofluorocarbons and hydrochlorofluorocarbons have much greater warming potential. Fortunately, these gases are found at much lower concentrations and many are being phased out as a result of global efforts to reduce destruction of stratospheric ozone. In the United States in 2010, CO_2 emissions account for about 84 percent of the GHG emissions, followed by CH_4 at about 9 percent and N_2O at just under 5 percent.[5]

GHG EMISSIONS INVENTORIES

Global Emissions. Worldwide emissions of GHGs in 2004 were 49 billion tons of CO_2e per year. Global GHG emissions due to human activities have grown since pre-industrial times, with an increase of 70% between 1970 and 2004.[6]

U.S. Emissions. In 2008, the United States emitted about 7 billion tons of CO_2e, a 14 percent increase from 1990. Emissions per capita have remained nearly level since 1990, as emissions have increased at about the same rate as the population.[7]

State of California Emissions. In 2009, California's net emissions were approximately 453 million metric tons of CO_2e, or about 6.5 percent of the U.S. emissions. This large number is due primarily to the sheer size of California compared to other states. By contrast, California has the fifth lowest state-wide per capita GHG emission rates in the country. 2009 total net emissions represent a 1.3 percent decrease from 2000 and a 6.1 increase from 1990 emissions levels.[8]

Bay Area Emissions. BAAQMD most recently updated the GHG emission inventory in 2010 using a base year of 2007.[9] In the Bay Area, fossil fuel consumption in the transportation sector (on-road motor

---

[4] CalEPA, April 3, 2006, *Final 2006 Climate Action Team Report to the Governor and Legislature.*

[5] U.S. EPA, April 15, 2012, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 – 2010*, Table 2-1: Recent Trends in U.S. Greenhouse Gas Emissions and Sinks.

[6] Intergovernmental Panel on Climate Change, November 2007, Climate Change 2007: Synthesis Report, Figure 2.1.

[7] U.S. EPA, 2010, *Climate Change Indicators in the United States*, p. 11.

[8] California Energy Commission (CEC), Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2009, December 2011.

[9] BAAQMD, February 2010, *Source Inventory of Bay Area Greenhouse Gas Emissions*, available at http://www.baaqmd.gov/Divisions/Planning-and-Research/Emission-Inventory/Greenhouse-Gases.aspx.

vehicles, off-highway mobile sources, and aircraft) is the single largest source of the Bay Area's GHG emissions, accounting for 36.41% of the Bay Area's 95.8 million tons of GHG emissions in 2007. Industrial and commercial sources were the second largest contributors of GHG emissions with about 36.40% of total emissions. Domestic sources (e.g., home water heaters, furnaces, etc.) account for about 7% of the Bay Area's GHG emissions, and energy production accounted for 15.9% percent. Off-road equipment and agriculture make up the remainder with approximately 3% and 1.2% of the total Bay Area 2007 GHG emissions, respectively.

POTENTIAL EFFECTS OF GLOBAL CLIMATE CHANGE

Global Effects

Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. A warming of about 0.2°C (0.36°F) per decade is projected, and there are identifiable signs that global warming is taking place, including substantial ice loss in the Arctic. The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects, according to the IPCC.[10]

- Snow cover is projected to contract, with permafrost areas sustaining thawing.
- Sea ice is projected to shrink in both the Arctic and Antarctic.
- Hot extremes, heat waves, and heavy precipitation events are likely to increase in frequency.
- Future tropical cyclones (typhoons and hurricanes) will likely become more intense.
- Non-tropical storm tracks are projected to move poleward, with consequent changes in wind, precipitation, and temperature patterns. Increases in the amount of precipitation are very likely in high-latitudes, while decreases are likely in most subtropical regions.
- Warming is expected to be greatest over land and at most high northern latitudes, and least over the Southern Ocean and parts of the North Atlantic Ocean.

Potential secondary effects from global warming include global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.

Effects on the State of California

According to CARB, some of the potential impacts in California of global warming may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years.[11] Several recent studies have attempted to explore the possible negative consequences that climate change, left unchecked, could have in California. These reports acknowledge that climate scientists' understanding of the complex global climate system, and the interplay of the various internal and external factors that affect climate change, remains too limited to yield

[10] International Panel on Climate Change (IPCC) *Special Report on Emissions Scenarios, 2000*, www.grida.no/climate/ipcc/emission/002.htm, accessed July 24, 2007.

[11] California Air Resources Board, December 2006, *Public Workshop to Discuss Establishing the 1990 Emissions Level and the California 2020 Limit and Developing Regulations to Require Reporting of Greenhouse Gas Emissions*.

scientifically valid conclusions on such a localized scale. Substantial work has been done at the international and national level to evaluate climatic impacts, but far less information is available on regional and local impacts. In addition, projecting regional impacts of climate change and variability relies on large-scale scenarios of changing climate parameters, using information that is typically at too general a scale to make accurate regional assessments.[12]

Below is a summary of some of the potential effects reported in an array of studies that could be experienced in California as a result of global warming and climate change:

- Air Quality – Higher temperatures, conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. For other pollutants, the effects of climate change and/or weather are less well studied, and even less well understood.[13] If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thus ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat related deaths, illnesses, and asthma attacks throughout the State.[14]
- Water Supply – Uncertainty remains with respect to the overall impact of global climate change on future water supplies in California. For example, models that predict drier conditions (i.e., parallel climate model [PCM]) suggest decreased reservoir inflows and storage and decreased river flows, relative to current conditions. By comparison, models that predict wetter conditions (i.e., HadCM2) project increased reservoir inflows and storage, and increased river flows.[15]
- Hydrology – As discussed above, climate change could potentially affect the amount of snowfall, rainfall and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for salt water intrusion. Sea level rise can be a product of global warming through two main processes: expansion of seawater as the oceans warm, and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could also jeopardize California's water supply. In particular, saltwater intrusion would threaten the quality and reliability of the state's major fresh water supply that is pumped from the southern portion of the Sacramento/San Joaquin River Delta. Increased storm intensity and frequency could affect the ability of flood-control facilities (including levees) to handle storm events.
- Agriculture – California has a $30 billion agricultural industry that produces half the country's fruits and vegetables. The California Climate Change Center (CCCC) notes that higher CO2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase; crop-yield could be threatened by a less reliable water supply; and greater ozone pollution could render plants more susceptible to pest

[12] Kiparsky, M. and P.H. Gleick, July 2003, *Climate Change and California Water Resources: A Survey and Summary of the Literature*.

[13] U.S. EPA, 2010, *Climate Change Indicators in the United States*.

[14] California Climate Change Center (CCCC), July 2006, *Our Changing Climate: Assessing the Risks to California*, CEC- 500-2006-077.

[15] Brekke, L.D., et al, 2004, "Climate Change Impacts Uncertainty for Water Resources in the San Joaquin River Basin, California." *Journal of the American Water Resources Association*. 40(2): 149–164.

and disease outbreaks. In addition, temperature increases could change the time of year that certain crops, such as wine grapes, bloom or ripen, and thus affect their quality.[16]

- Ecosystems and Wildlife – Increases in global temperatures and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. In 2004, the Pew Center on Global Climate Change released a report examining the possible impacts of climate change on ecosystems and wildlife.17 The report outlines four major ways in which it is thought that climate change could affect plants and animals: (1) timing of ecological events; (2) geographic range; (3) species' composition within communities; and (4) ecosystem processes such as carbon cycling and storage.

REGULATORY SETTING

INTERNATIONAL AND FEDERAL

Kyoto Protocol.

The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC) (signed on March 21, 1994). The Kyoto Protocol is a treaty made under the UNFCCC and was the first international agreement to regulate GHG emissions. It has been estimated that if the commitments outlined in the Kyoto Protocol are met, global GHG emissions could be reduced by an estimated 5 percent from 1990 levels during the first commitment period of 2008–2012. It should be noted that although the United States is a signatory to the Kyoto Protocol, Congress has not ratified the Protocol and the United States is not bound by the Protocol's commitments.

Climate Change Technology Program

The United States has opted for a voluntary and incentive-based approach toward emissions reductions in lieu of the Kyoto Protocol's mandatory framework. The Climate Change Technology Program (CCTP) is a multi-agency research and development coordination effort (which is led by the Secretaries of Energy and Commerce) that is charged with carrying out the President's National Climate Change Technology Initiative.[18]

U.S. Environmental Protection Agency (U.S. EPA)

To date, the U.S. EPA has not regulated GHGs under the Clean Air Act (discussed above) based on its assertion in *Massachusetts et al. v. EPA et al*[19] that the "Clean Air Act does not authorize it to issue mandatory regulations to address global climate change and that it would be unwise to regulate GHG emissions because a causal link between GHGs and the increase in global surface air temperatures has not been unequivocally established." However, in the same case (*Massachusetts v. EPA*), the U.S. Supreme Court held that the U.S. EPA can, and should, consider regulating motor-vehicle GHG emissions.

---

[16] CCCC, July 2006, *Our Changing Climate: Assessing the Risks to California*, CEC- 500-2006-077.

[17] Parmesan, C. and H. Galbraith, November 2004, *Observed Impacts of Global Climate Change in the U.S.*,.

[18] Climate Change Technology Program (CCTP), About the U.S. Climate Change Technology Program (web page), Washington, D.C., last updated April 2006, http://www.climatetechnology.gov/about/index.htm, accessed July 24, 2007.

[19] U.S. Supreme Court, *Massachusetts et. al. v. EPA et. al* (No. 05-1120, 415F 3d 50), April 2, 2007.

STATE OF CALIFORNIA

Senate Bill 97—Modification to the Public Resources Code

Pursuant to Senate Bill 97, the California Natural Resources Agency reviewed and adopted the amendments to the CEQA Guidelines on December 30, 2010 prepared and forwarded by the Governor's Office of Planning and Research (OPR). The Amendments became effective on March 18, 2010, including the addition of the GHG emissions environmental topic and checklist items.

AB 32 and the Air Resource Board's Climate Change Scoping Plan

In 2006, the governor of California signed AB 32, the Global Warming Solutions Act, into legislation. The Act requires that California cap its GHG emissions at 1990 levels by 2020.

In December 2008, ARB adopted its Climate Change Scoping Plan, which contains the main strategies California will implement to achieve reduction of approximately 169 million metric tons of CO_2e, or approximately 30% from the state's projected 2020 emission level of 596 million metric tons of CO_2e under a business-as-usual scenario (this is a reduction of 42 million metric tons CO_2e, or almost 10%, from 2002-2004 average emissions). The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- improved emissions standards for light-duty vehicles (estimated reductions of 31.7 million metric tons CO_2e);
- the Low-Carbon Fuel Standard (15.0 million metric tons CO_2e);
- energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 million metric tons CO_2e); and
- a renewable portfolio standard for electricity production (21.3 million metric tons CO_2e).

ARB has not yet determined what amount of GHG reductions it recommends from local government operations; however, the Scoping Plan does state that land use planning and urban growth decisions will play an important role in the state's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions (meanwhile, ARB is also developing an additional protocol for community emissions). ARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. The Scoping Plan states that the ultimate GHG reduction assignment to local government operations is to be determined (ARB 2008). With regard to land use planning, the Scoping Plan expects approximately 5.0 million metric tons CO2e will be achieved associated with implementation of SB 375, which is discussed further below.[20]

[20] Bay Area Air Quality Management District, May 2012, *California Environmental Quality Act Air Quality Guidelines*, Appendix C: Sample Air Quality Setting.

California Green Building Standards Code

The Green Building Standards Code (CALGreen), requiring all new buildings in the state to be more energy efficient and environmentally responsible, took effect on January 1, 2011. These comprehensive regulations are targeted to achieve major reductions in greenhouse gas emissions, energy consumption and water use to create a greener California.

CALGreen will require that every new building constructed in California:

- Reduce water consumption by 20 percent,
- Divert 50 percent of construction waste from landfills
- Install low pollutant-emitting materials
- Requires separate water meters for nonresidential buildings' indoor and outdoor water use
- Requires moisture-sensing irrigation systems for larger landscape projects
- Requires mandatory inspections of energy systems (e.g., heat furnace, air conditioner and mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity and according to their design efficiencies.

REGIONAL AND LOCAL

Bay Area Air Quality Management District

The Project site falls within the San Francisco Bay Area Air Basin and therefore under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). BAAQMD provides a document titled *California Environmental Quality Act Air Quality Guidelines* ("Guidelines"), which provides guidance for consideration by lead agencies, consultants, and other parties evaluating air quality impacts in the San Francisco Bay Area Air Basin conducted pursuant to CEQA. The document includes guidance on evaluating and mitigating greenhouse gas emissions impacts.

BAAQMD has recently updated these Guidelines in coordination with adoption of new thresholds of significance on June 2, 2010.[21] The most recent version of the Guidelines is dated May 2012. The updated CEQA Guidelines revised significance thresholds, assessment methodologies, and mitigation strategies for criteria pollutants, air toxics, odors, and greenhouse gas emissions.

Town of Atherton Climate Action Plan

A Climate Action Plan is being prepared by the Town of Atherton, however, it was not available even in draft form during writing of this document.

[21] Bay Area Air Quality Management District. June 2, 2010. News Release http://www.baaqmd.gov/~/media/Files/Communications%20and%20Outreach/Publications/News%20Releases/2010/ceqa_100602.ashx .

IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Appendix G of the CEQA Guidelines (Environmental Checklist) contains a list of air quality effects that may be considered significant. Implementation of the Project would have a significant effect on the environment if it were to:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment
2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases

The CEQA Guidelines state that, where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. BAAQMD updated their thresholds on June 2, 2010 and the BAAQMD Guidelines in May 2011, which have been used for this greenhouse gas emissions analysis, as detailed under each item below.

On March 5, 2012 the Alameda County Superior Court issued a judgment finding that BAAQMD had failed to comply with CEQA when it adopted its 2010 Thresholds. The court did not determine whether the Thresholds were valid on the merits, but found that the adoption of the Thresholds was a project under CEQA. The court issued a writ of mandate ordering BAAQMD to set aside the Thresholds and cease dissemination of them until BAAQMD had complied with CEQA.

This analysis is based upon these BAAQMD 2010 Thresholds. While it is possible to instead analyze the Project under BAAQMD's previous 1999 Thresholds, BAAQMD did not include GHG emissions thresholds in its 1999 Thresholds. No federal or state thresholds exist for GHG emissions yet the California Office of Planning and Research, in the updated CEQA Guidelines and a technical advisory[22], requires quantification of GHG emissions and a determination of significance. In the absence of other recommended thresholds, BAAQMD's 2010 GHG emissions thresholds are utilized in this analysis and the best available thresholds to provide a conservative analysis of potential impacts from GHG emissions. These thresholds are based upon current regulations, scientific understanding and methodologies and conform to the goals of AB32 and are therefore considered the most appropriate thresholds for a conservative CEQA analysis.

GREENHOUSE GAS EMISSIONS

BAAQMD has determined that GHG emissions and global climate change represent cumulative impacts. No single project could generate enough GHG emissions to noticeably change the global average temperature, but the combination of GHG emissions from past, present, and future projects contribute substantially to the phenomenon of global climate change and its associated environmental impacts. In developing thresholds of significance for GHG emissions, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a

[22] OPR, Technical Advisory; CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review, June 19, 2008, available at: http://opr.ca.gov/docs/june08-ceqa.pdf.

project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse GHG emissions impacts.[23]

BAAQMD provides two alternative quantitative thresholds, a brightline threshold of 1,100 metric tons of CO_2e per year to assess smaller projects or an efficiency-based threshold of 4.6 metric tons CO_2e per Service Population (SP) per year for larger projects. BAAQMD defines the SP as the number of residents and employees generated by the project. In this case, the Project would not change the number of residents or substantially increase the number of employees. Therefore, the Project is small enough that the brightline threshold is the larger of the two and the Project is assessed against the brightline threshold of 1,100 metric tons of CO_2e per year for this analysis.

Impact GHG-1: **Increased GHG Emissions.** Construction and operation of the proposed Project would be additional sources of GHG emissions, primarily through consumption of fuel for transportation and energy usage on an ongoing basis. However, additional emissions due to the Project are below threshold levels and are therefore considered a ***less than significant*** impact.

Construction-period and operational emissions are discussed separately in more detail below.

Construction Period

BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions, though recommends quantification using URBEMIS for proposed land use development projects and a determination regarding significance in relation to meeting AB 32 goals. Though construction-period emissions would be temporary only, BAAQMD's operational GHG emissions threshold of more than 1,100 metric tons per year of CO_2e is used as a conservative construction-period threshold of significance for the construction-period analysis.[24]

Temporary construction-related exhaust would be an additional source of GHG emissions that could contribute to regional greenhouse gas emissions. Sources of construction-related GHGs only include exhaust, for which the CO_2 emissions have been calculated using the URBEMIS2007 model with the same inputs used to calculate emissions of air pollutants and precursors (included in Appendix B). Construction-period CO_2e would total 259 metric tons[25] over an approximately 13 month period. This level of emissions is well below the threshold of significance of 1,100 metric tons per year and the impact would be less than significant.

Operational Period

As discussed above, the Project would have a significant environmental impact if it would exceed BAAQMD's brightline GHG emissions threshold of 1,100 metric tons of CO_2e per year.

BAAQMD has developed screening criteria to provide a conservative indication of whether a proposed project could result in potentially significant greenhouse gas emissions impacts. If the screening criteria

[23] Bay Area Air Quality Management District, May 2011, *California Environmental Quality Act Air Quality Guidelines*, p. 2-1.

[24] Ibid, p. 8-7.

[25] URBEMIS short tons of CO_2 output was converted to CO_2e using a conversion factor of 100/95 (the general ratio of CO_2e from other GHGs relative to that from CO_2 emissions for exhaust) and to metric tons using the standard conversion factor of 0.907.

are met by a proposed project, it can be confidently determined that the Project would be below threshold levels without the need to perform a detailed quantification of the Project's emissions. BAAQMD lists an operational greenhouse gas emissions screening size of 600 acres for a park use, the closest type of use to the proposed Project. The Project site is 15 acres and therefore would not be anticipated to result in operational emissions of GHG over threshold levels. [26] Additionally, the Project site is already being operated as a sports facility, so much of the emissions are existing and would not be a result of the Project. Operational impacts are due mostly to vehicle emissions and, as discussed in Chapter 10: Transportation and Circulation, there would be only minimal increases in vehicle trips to the area due to the Project. Operational GHG emissions impact of the Project would be less than significant.

CONSISTENCY WITH GHG REDUCTION PLANS

As discussed in the setting above, the Town has not yet adopted a qualified GHG Reduction Strategy, so consistency with such a plan cannot be analyzed. A Climate Action Plan that is intended to fulfill this role is currently being prepared, but is not yet adopted or available.

Because the Project is not located in a community with an adopted qualified GHG Reduction Strategy, consistency with such a plan cannot be analyzed. GHG emissions associated with the development of the proposed Project were analyzed per the BAAQMD May 2011 CEQA Air Quality Guidelines. BAAQMD's thresholds and methodologies take into account implementation of state-wide regulations and plans, such as the AB 32 Scoping Plan and adopted state regulations such as Pavley and the low carbon fuel standard. Therefore, there would be ***no impact*** in relation to consistency with GHG reduction plans.

[26] Bay Area Air Quality Management District, *California Environmental Quality Act Air Quality Guidelines*, May 2011, Table 3-1.

9

NOISE

INTRODUCTION

This section of the Draft EIR has been prepared by RGDL Acoustics utilizing noise measurements performed on and around the site, as detailed below.

This section evaluates the potential noise and groundborne vibration impacts associated with the implementation of the proposed Project. This noise and vibration analysis has been prepared using analytical methodologies and evaluation criteria outlined in the California Environmental Quality Act (CEQA) Guidelines, the Town of Atherton General Plan, and the Atherton Municipal Code.

FUNDAMENTALS OF NOISE

Sound and Environmental Noise

Noise can be defined as unwanted sound. It is commonly measured with an instrument called a sound level meter. The sound level meter captures the sound with a microphone and converts it into a number called a sound level. Sound levels are expressed in units of decibels.

To correlate the microphone signal to a level that corresponds to the way humans perceive noise, the A-weighting filter is used. A weighting de-emphasizes low-frequency and very high-frequency sound in a manner similar to human hearing. The use of A-weighting is required by most local General Plans as well as federal and state noise regulations (e.g. Caltrans, EPA, OSHA and HUD). The abbreviation dBA is sometimes used when the A weighted sound level is reported.

Because of the time-varying nature of environmental sound, there are many descriptors that are used to quantify the sound level. Although one individual descriptor alone does not fully describe a particular noise environment, taken together, they can more accurately represent the noise environment. There are four descriptors that are commonly used in environmental studies; the Lmax, Leq, L90, and Ldn (or CNEL), as defined below.

The maximum instantaneous noise level (Lmax) is often used to identify the loudness of a single event such as a car passby or airplane flyover. To express the average noise level, the Leq (equivalent noise level) is used. The Leq can be measured over any length of time but is typically reported for periods of 15 minutes to 1 hour. The background noise level (or residual noise level) is the sound level during the quietest moments. It is usually generated by steady sources such as distant freeway traffic. It can be quantified with a descriptor called the L90 which is the sound level exceeded 90 percent of the time.

To quantify the noise level over a 24-hour period, the Day/Night Average Sound Level (DNL or Ldn) or Community Noise Equivalent Level (CNEL) is used. These descriptors are averages like the Leq except they include a 10 dB penalty during nighttime hours (and a 5 dB penalty during evening hours in the CNEL) to account for peoples increased sensitivity during these hours (American National Standards Institute, ANSI S1.1-1994, Acoustical Terminology, 1994).

The potential for adverse community response tends to increase as an intrusive noise becomes more noticeable above existing background noise levels. For example, if an intrusive noise has an average level that is comparable to existing average ambient noise levels, then the intrusive sound would tend to blend in with the ambient noise. However, if the intrusive sound is significantly greater than the ambient noise then the intrusive sound would be more noticeable and potentially more annoying as it can interfere with rest, working efficiency, social interaction and general tranquility.

In general, human perception of environmental noise is such that a change in sound level of 3 dB is just noticeable, a change of 5 dB clearly noticeable and a change of 10 dB is perceived as a doubling (or halving) of loudness (Cowen, Handbook of Environmental Acoustics, 1994).

Table 9.1: Representative Environmental Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	—110—	Rock Band
Jet Fly-over at 100 feet		
	—100—	
Gas Lawnmower at 3 feet		
	—90—	
		Food Blender at 3 feet
Diesel Truck going 50 mph at 50 feet	—80—	Garbage Disposal at 3 feet
Noisy Urban Area during Daytime		
Gas Lawnmower at 100 feet	—70—	Vacuum Cleaner at 10 feet
Commercial Area		Normal Speech at 3 feet
Heavy Traffic at 300 feet	—60—	
		Large Business Office
Quiet Urban Area during Daytime	—50—	Dishwasher in Next Room
Quiet Urban Area during Nighttime	—40—	Theater, Large Conference Room (background)
Quiet Suburban Area during Nighttime		
	—30—	Library
Quiet Rural Area during Nighttime		Bedroom at Night, Concert Hall (background)
	—20—	
		Broadcast/Recording Studio
	—10—	
Lowest Threshold of Human Hearing	—0—	Lowest Threshold of Human Hearing

FUNDAMENTALS OF GROUNDBORNE VIBRATION

Ground vibration is the movement of the earth caused by natural or human-made events. Different methods are typically used to quantify vibration amplitude. One is the Peak Particle Velocity (PPV) and another is the Root Mean Square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration. In this section, the unit VdB is used to express RMS Vibration Velocity Level in decibels relative to a level of 1 micro-inch per second.

Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high noise environments, which are

more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generate the highest construction related ground-borne vibration levels. The two primary concerns with construction-induced vibration are the potential to damage a structure and the potential to create an annoyance for nearby people. Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is at a high state of disrepair and the construction activity occurs immediately adjacent to the structure. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. The impacts section discusses the question of vibration in more detail.

ENVIRONMENTAL SETTING

PROJECT LOCATION AND NEARBY SENSITIVE RECEPTORS

The Cartan Field site is bordered on two sides by roadways (El Camino Real and Alejandro Avenue) and by residences on two sides. The residential properties are along Brittany Meadows and Isabella Avenue. On the west side of the Project site the residential backyards are separated from the fields by either a chain link fence or a masonry wall. On the north side, a chain link fence separates the fields from a drainage channel that runs along the residential property line between the residences and fields.

EXISTING CONDITIONS

The fields are used for a variety of practices and games which vary throughout the school year and summer break. The Project description details the various uses, seasons and practice/game schedules. In addition to the sound from the use of the fields, the study area is exposed to noise from traffic on El Camino Real, traffic on distant roadways, railroad trains, occasional aircraft flyovers and maintenance activities.

Existing Ambient Noise Levels

Noise measurements were conducted on and around the Project site to document existing noise levels at nearby land uses and to quantify some of the existing noise sources at the fields. The noise measurements included long-term (6-day) noise measurements at two locations and short-term (15-minute) noise measurements at four locations. Noise measurement locations are shown in **Figure 9.1**.

Figure 9.2 shows the results of the long-term noise measurements in terms of the average noise (Leq) for each 15-minute interval during the long-term noise measurements. **Table 9.2** shows the calculated CNEL for each full 24-hour period as well as the weekly average CNEL. The weekly average CNEL is derived from the measurement results excluding noise from Monday, January 21, the Martin Luther King Jr. Holiday). During the long-term noise measurements there were some sports practices occurring on the fields but there were no official games occurring since competitive play had not begun.

The results of the short-term noise measurement are shown in **Table 9.3**. The instantaneous sound levels from various field activities and ambient noise sources are noted. The average noise level (Leq) shown in **Table 9.3** includes the continuous ambient noise from distant traffic as well as the contribution the sports related noise.

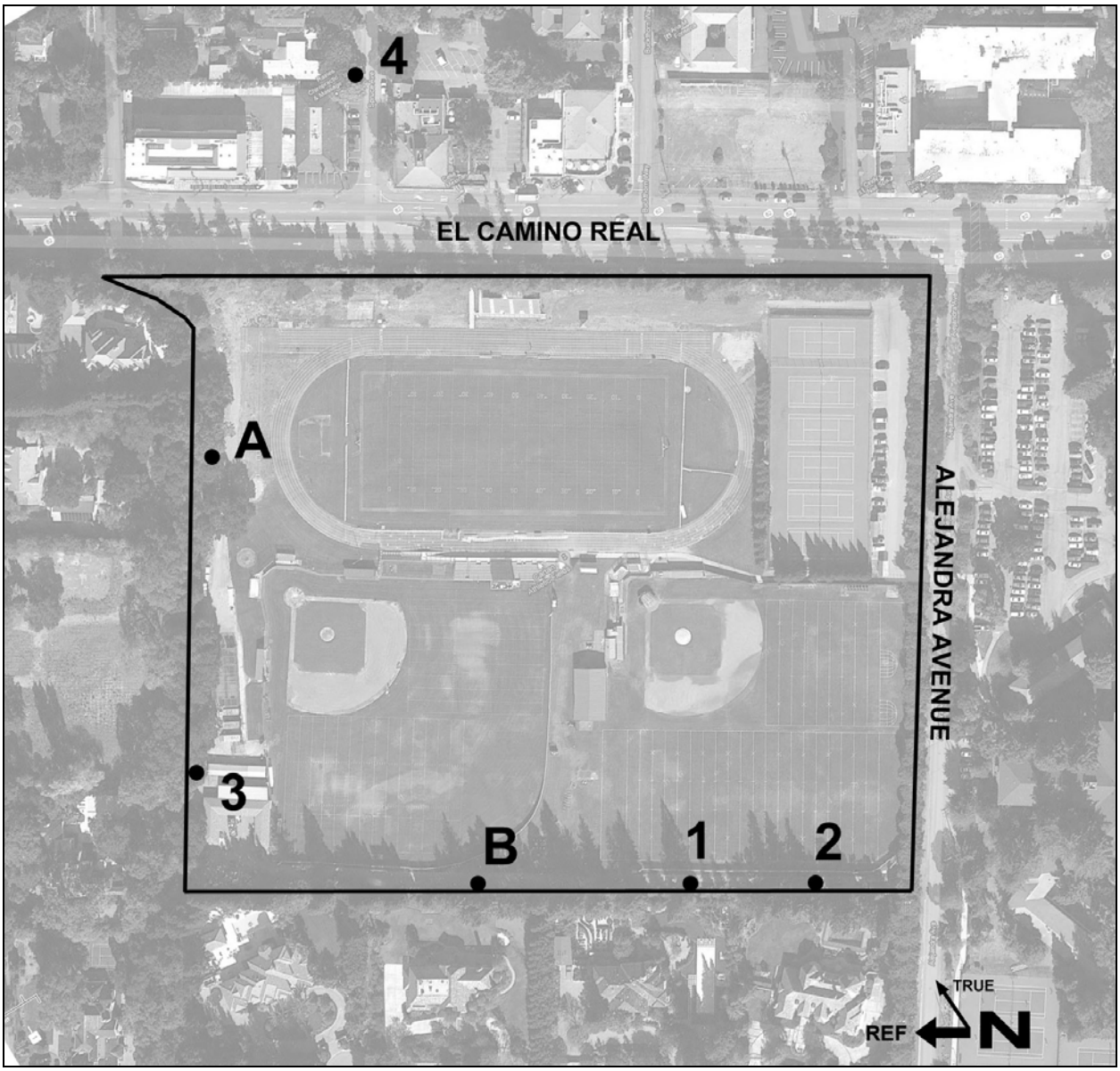


Figure 9.1: Noise Measurement Locations

Figure 9.2: Long-Term Noise Measurement Results

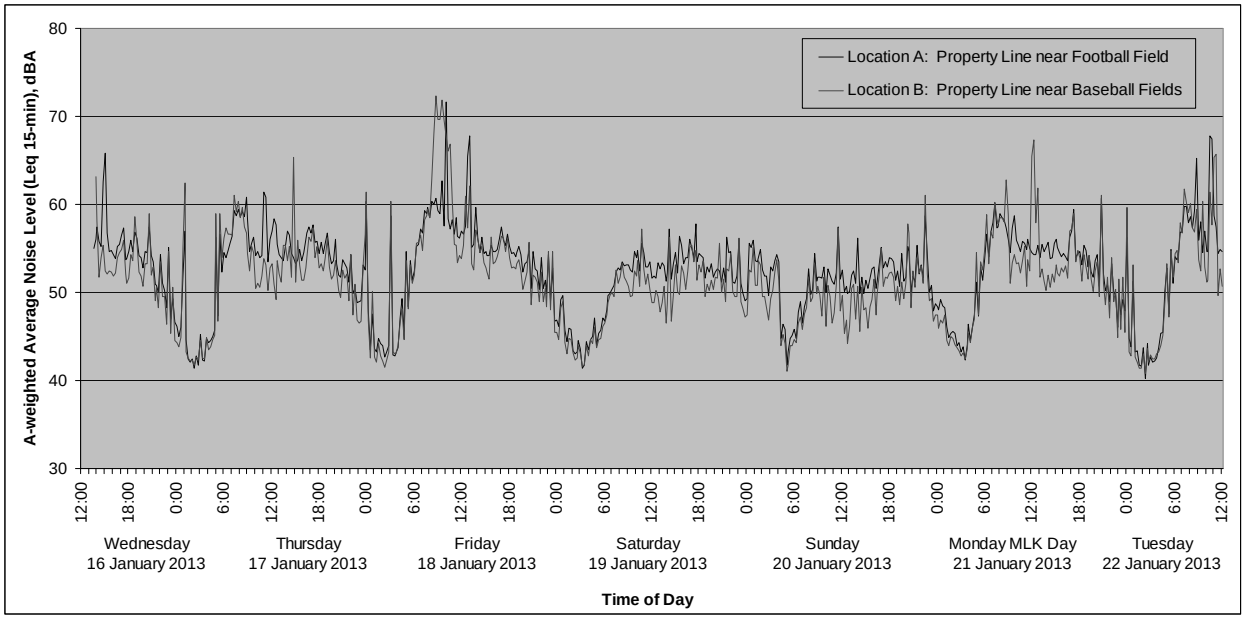


Table 9.2: Long-Term Ambient Noise Measurements

Location		Community Noise Equivalent Level (CNEL), dBA						
		Thursday 17 Jan 13	Friday 18 Jan 13	Saturday 19 Jan 13	Sunday 20 Jan 13	Monday 21 Jan 13	Tuesday 22 Jan 13	Weekly Average
A	North Property Line Near Football Field	58	60	55	58	57	57	58
B	West Property Line Near Baseball Field	60	62	56	58	59	58	60

Table 9.3: Short-Term Ambient Noise Measurements

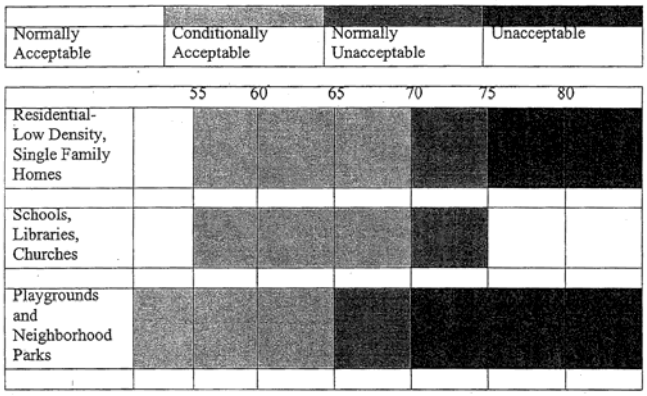
Location/Activities		Date/Time	Average Noise Level (L_{eq}) dBA	Events	Maximum Noise Levels (L_{max}) dBA
1	West property line Baseball practice 2 innings of scrimmage 340 feet to home plate	16 Jan 2013 3:47 – 4:02 PM	53	Bat hitting ball Voices Glove/ball Train Horn General Aviation	51 – 57 50 – 60 49 – 54 60 69
2	West property line Baseball practice 340 feet to home plate	22 Jan 2013 2:30 – 2:45 PM	52	Bat hitting ball Cart at 10 ft Jet Cars on Alejandra	50 – 58 67 55 54 - 57
3	North property line Batting practice in batting cage 105 feet to batter	22 Jan 2013 3:30 – 3:45 PM	50	Bat hitting dimple ball Ball hitting wall Voices Cart at 6 ft Train Horn	54 – 57 62 52 – 55 59 52 – 55
4	Near residence East of El Camino Real 125 Spruce Avenue	22 Jan 2013 1:45 – 2:00 PM	60	Cars Trucks Train horn Whistle at Cartan Field	53 – 55 57 – 72, 80 60 Barely audible

REGULATORY SETTING

TOWN OF ATHERTON

The Town of Atherton's General Plan contains noise and land use compatibility guidelines for various types of land use (see Figure 9.3). Schools and residences are considered "normally acceptable" when exposed to a Community Noise Equivalent Level (CNEL) of 55 dBA or less and "conditionally acceptable" when exposed to a CNEL of 55 to 70 dBA.

Figure 9.3: Town of Atherton's Land Use Compatibility for Community Environments



Normally Acceptable

The range of noise levels in this category is compatible with the specified land use type. No special noise insulation is required in buildings of conventional construction.

Conditionally Acceptable

The range of noise levels in this category is higher than those normally acceptable for the specified land use type. A detailed acoustic study should be undertaken to set forth design features that will reduce exterior noise levels and/or for construction to control the amount of" exterior noise reaching interior use spaces.

Normally Unacceptable

New construction or development of the specified land use type should be discouraged. If development is to proceed, a detailed acoustic study must be prepared and needed noise insulation features incorporated into the design.

Unacceptable

New development of the specified land use type should not be undertaken when the site falls within the range of noise levels in this category.

Source: Atherton General Plan, Table N-2

The Town of Atherton's Noise Control Ordinance (Chapter 8.16) establishes a "basic noise regulation" with the sound level limits shown in Table 9.4. According to the noise control ordinance:

Except as otherwise permitted under this chapter, no person shall cause and no property owner shall permit on such owners' property, a noise produced by any person, machine, animal or device, or any combination thereof, in excess of the sound level limits set forth in this section to emanate from any property, public or private, beyond the property line. Any sound in excess of the sound level limits set forth in this section shall constitute a noise disturbance. For purposes of determining sound levels, sound level measurements shall be made at any location on the receiving property.

> *A. In the event the alleged offensive noise contains a steady, audible tone, such as a whine, beating, pulsating, throbbing, or hum, the standards set forth in Section 8.16.030 shall be reduced by five dB.*

B. In the event the ambient sound level equals or exceeds the sound level limit then the limit shall be five dBA over the ambient.

Table 9.4: Town of Atherton's Nose Control Ordinance Sound Level Limits

Time of Day	Sound Level
7 AM to 10 PM	60 dBA
10 PM to 7 AM	50 dBA

According to the definition in the noise ordinance, sound level is the "maximum continuous or repetitive peak" level. Therefore, for the purposes of this assessment, the noise ordinance limit is applied to the regularly occurring maximum noise levels (Lmax).

The Town's noise standard is a relatively stringent standard for intermittent maximum noise levels. A sound level of 60 dBA is readily exceeded when people are near the property lines. For example, a male shouting generates an instantaneous noise level of about 90 dBA at a distance of 3 feet, which corresponds to a noise level of 60 dBA at a distance of 100 feet. Therefore, the noise ordinance limit of 60 dBA can be exceeded when someone is shouting within 100 feet of the property line. This means an outfielder at the baseball fields can easily exceed the noise ordinance limit by shouting. Also, groups of spectators and players at the existing baseball and football fields can exceed 60 dBA at both the north and west property lines.

The Project includes an amendment to the Noise Ordinance that provides an exception for athletic activities similar to the exception for little league activities at Holbrook-Palmer Park. The amendment also prohibits plastic horns (vuvuzelas) that have caused complaints. The proposed amendment would add the following to the Noise Ordinance:

> *Section 8.16.050.H Cartan Field. The noise from athletic activities at Cartan Field may periodically exceed the basic noise regulations between the hours of nine a.m. to seven p.m. weekdays and Saturdays, and ten a.m. to six p.m. Sundays, provided that noise levels shall not exceed seventy-five dBA when measured at any adjacent residential property. Vuvuzelas shall be prohibited at all times.*

Since the above Noise Ordinance amendment is part of the Project Description and its adoption will be required for the Project to proceed, this analysis uses the specified 75 dBA limit for assessment of the Project. The Noise Ordinance includes the specification that "…sound level measurements shall be made at any location on the receiving property." Therefore, noise levels tables in this analysis quantify the noise at the second floor elevation at the setback of the adjacent residents if it is greater than the noise of a receiver standing at the property.

Construction and delivery are exempt from the basic noise regulation except during those times when prohibited by Chapter 15.40; between the hours of five p.m. in the evening and eight a.m. of the following day, Monday through Friday as well as on Saturday, Sunday and any holiday.

Certain other activities are also exempt from the sound level limits including motor vehicles operated on public streets and power garden equipment during some hours. The noise ordinance also includes an exception for noise associated with little league activities at Holbrook-Palmer Park (Section 8.16.050.G).

IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

In accordance with Appendix G of Title 14, Chapter 3 of the California Code of Regulations (The 2006 State CEQA Guidelines), the project would have a significant noise impact if it would cause any of the following conditions to occur:

- 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;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- 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 airstrip, expose people residing or working in the project area to excessive noise levels; or
- For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

The above thresholds do not include quantifiable criteria. The following criteria utilize local regulations, or where those are lacking, applicable thresholds from other authorities. These criteria are used as thresholds of significance to identify potential noise impacts resulting from the implementation of the proposed Project:

- Exposure of persons to noise levels in excess of applicable standards (General Plan and Noise Ordinance, as amended by this Project). For the purposes of this analysis, if the noise ordinance limit is exceeded in both the existing and future conditions, there is a significant impact only if the noise levels will also noticeably increase as a result of the Project (i.e. if the average noise level (Leq) during the use of the fields/facility increases by 3 dBA or more).
- Substantial increase in noise levels due to the Project: CEQA does not specify a method for determining when a project would cause a significant increase in noise. Likewise, the Town of Atherton does not have criteria for determining when a noise increase is significant. A recent FAA Draft Policy discusses screening and impact thresholds for increases in aircraft noise. These thresholds are based on human perception of noise increases and are therefore appropriate to utilize to assess the significance of noise increases due to the Project as follows. An increase in CNEL is significant if it is;
    - 5 dBA or greater and the future CNEL is less than 60 dBA or
    - 3 dBA or greater and the future CNEL is 60 dBA or greater and less than 65 dBA or
    - 1.5 dBA or greater and the future CNEL is 65 dBA or greater.
- CEQA, the Town and the State do not specify acceptable vibration levels from construction activities. For the purposes of this assessment, the methodology described by the Federal Transit

Administration (FTA) is used. These FTA criteria are based on the potential for annoyance and interference with vibration sensitive activities which is much more stringent than criteria for structural damage. The FTA specifies vibration impact criteria of 80 VdB for residences and 83 VdB for schools. These criteria are for "infrequent" events (i.e. transit train passbys). Although more stringent criteria are recommended for "frequent" or "occasional" events, the Project would only have the potential to cause vibration impacts during construction activities, which would generally occur during the daytime and would not be permanent, so would therefore be defined as "infrequent" events.

PROJECT GENERATED NOISE

The major noise sources at the Project site are the activities that occur on the various fields. The following narratives describe the existing and future noise sources. It also describes, generally, how the noise levels will change from each source under the Project conditions. In actuality, the various noise sources at Cartan Field would combine with each other and with non-field sources such as traffic, aircraft and railroad to create the overall ambient noise environment. This combined ambient noise environment is discussed at the end of this section in the narrative titled "Summary of Changes in Existing Noise Levels due to Future Cartan Field Athletic Activities".

Football/Soccer/Lacrosse

Football, soccer and lacrosse are played on the existing field at the northeast corner of the Cartan Fields site. Noise sources during practices include voices of players and coaches, whistles and ball kicks. During games, cheering spectators as well as announcements and music over the PA system are the dominant noise sources.

The primary Project feature affecting the noise from football, soccer and lacrosse will be the shifting of the field toward the north property line. As a result, the distance between the center of the field and the north property line will decrease from 383 feet in the existing condition to 234 feet with the Project. In addition, due to the consolidation of the east and west side bleachers into a wider grandstand on the west side, the spectator seating area will shift closer to the north property line. As a result, the distance between the north property line and the nearest edge of the spectator seating area will decrease from 318 feet to 105 feet. The current and proposed location of this field is shown on **Figure 9.4**.

There are two primary factors that would contribute to changes in noise levels experienced by the residences from activities at the new football stadium. One is the shifting of the field to the north and the other is an increase in use or number of spectators.

The shifting of the field to the north would increase levels to the north but will not increase the noise levels at the residences along the west property line. In fact, the noise levels from football, soccer and lacrosse are expected to decrease somewhat due to the barrier effect of the proposed grandstand structure which will tend to reduce transfer of noise from the field and spectators to the homes on the west side of the site.

The assumed 10% increase in spectators would result in a very small increase in the average noise level of 0.4 dBA. In addition, there would also be more usage of the field with the Project. For example, many of the soccer practices and games that are currently taking place on Wunderlich Fields will move to Cartan Fields.

It is assumed that the PA will be used in a manner similar to the existing conditions. Since the specifics of the new PA system design are not known at this time, no adjustment is made to account for a decrease in PA noise which might be possible through careful design of the new system.

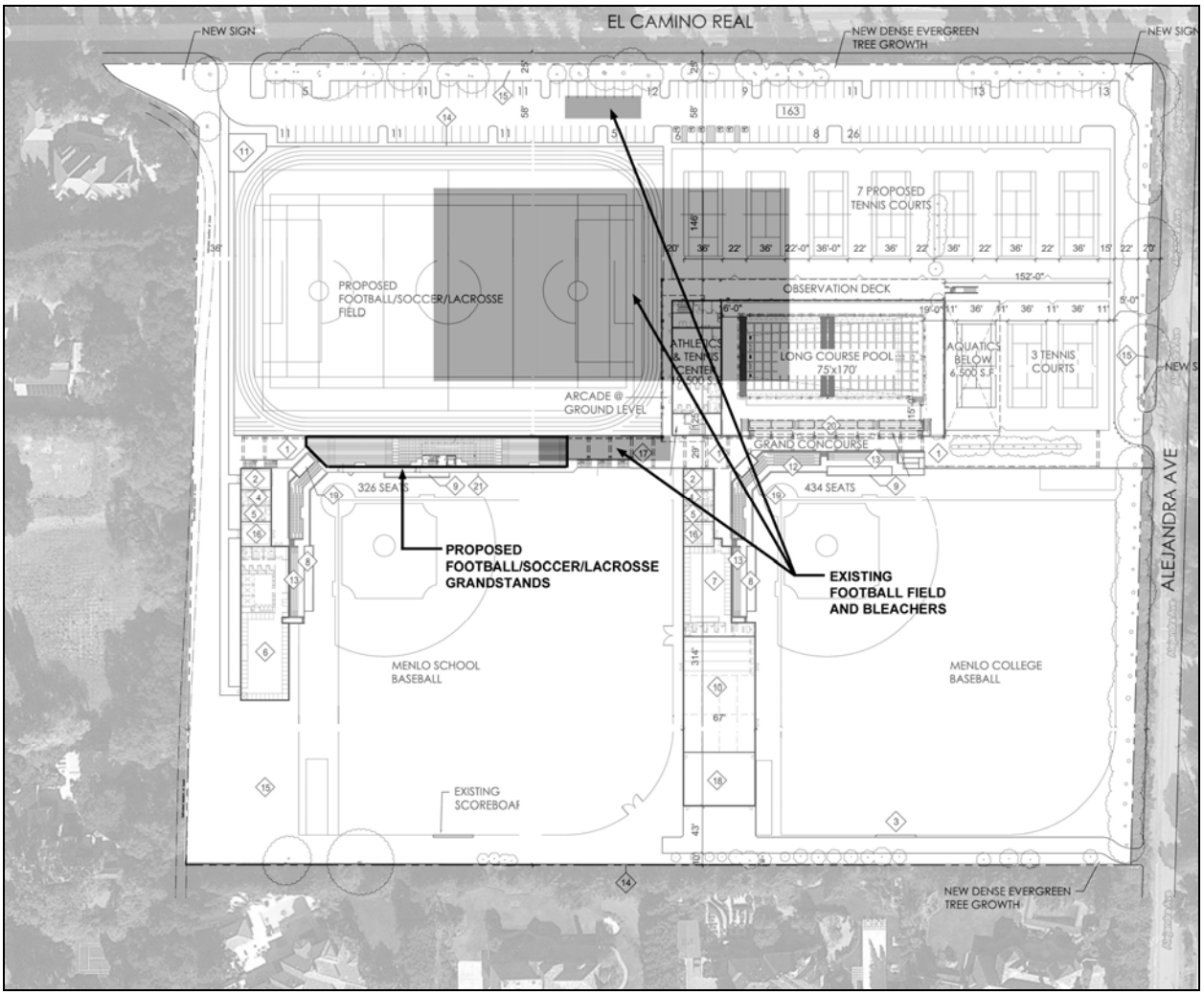


Figure 9.4: Existing and Future Football/Soccer/Lacrosse Field Location

Baseball

Baseball is played on the two fields along the west side of the Project site. The Project includes reconstructing these fields at the same locations as the existing ones. The construction plans include new buildings along the north side of each field. The acoustical shielding provided by these buildings will tend to reduce the noise levels experienced by the residences along the north property line. At the residences to the west, the sound levels during games will remain similar to the existing condition because the distance between the fields and the property line would remain the same and the buildings will provide only partial acoustical shielding. The acoustical reflections of spectator and field noise from the new buildings and walls behind the new spectator seating were taken into account in the SoundPLAN computer model. These acoustical reflections account for an increase in baseball noise of approximately 1 dBA. The assumed 10% increase in spectators would increase game noise levels by an additional 0.4 dBA.

The new PA speakers will be located in the wall at the rear of the seating areas. This arrangement could result in lower noise levels, but for the purposes of this assessment, the Project PA system sound level is assumed to be no greater than the existing system.

There is anecdotal evidence of past use of vuvuzelas, or stadium horns by spectators at the site. These horns have generated complaints from neighbors and are believed to reach sound levels that are potentially damaging to the hearing of the spectators themselves. A ban on vuvuzelas at any sporting events at Cartan Field went into effect this academic year and would be banned by Town Ordinance as part of this Project.

The existing chain link fence batting cages will be replaced with a new fully enclosed batting cage located in a building between the two fields. Measurements indicate that maximum noise levels (Lmax) from bats hitting balls and balls hitting a wall are 54 to 62 dBA, at a distance of 105 feet from the existing batting cage. The new building is expected to reduce batting practice noise by about 25 dBA, the noise reduction typically provided by a building. The inclusion of an enclosed batting cage would ensure that noise from batting cage activities, which now sometimes exceeds noise standards at the nearby residential lots, would instead remain within acceptable levels.

The level of activity on the baseball fields during the school year (games and practices) is expected to remain the same as the existing condition which is a total of 22 Menlo College games and 34 Menlo School games. The Menlo School summer baseball program is considered a new use and will add an additional 6 games on the Menlo School field. This increase in activity represents an increase in annual average noise levels from baseball of less than 1 dBA at the homes nearest the Menlo School field.

The Project will replace the Menlo School baseball field natural turf with artificial turf. This change will reduce the noise associated with maintenance of the field which, at times, is a significant contributor to ambient noise levels. During the ambient noise measurements noise levels from mowing the baseball fields generated an hourly average noise level (L_{eq}) of 70 dBA at the west property line, greater than the average noise levels generated by the use of the baseball fields. To be conservative, and since the Menlo College field will remain natural grass, the maintenance noise is assumed to remain the same for the purpose of quantifying noise impacts in this assessment.

Aquatics

The new pool will be located near the center of the Project site approximately 430 feet from the west property line and 500 feet from the north property line. The Project site layout and design features will result in significant acoustical shielding of pool noise at the residential property lines to the west and north. Along the west side of the pool there will be a 16 foot tall wall along the back of the Menlo College baseball bleachers. On the north side of the pool, the new Athletics and Tennis Center building

will provide a 33 foot tall barrier. In addition, the pool itself will be depressed 14 feet below the surrounding grade such that the last row of the spectator seats will be at the same level as the surrounding ground and the first row of the seats will be four feet below the surrounding ground level. There will also be acoustical fabric installed over the seating area which will have a minimum surface density of 1.5 pounds per square foot and a minimum noise reduction coefficient (NRC) of 0.70.

The pool will be used for water polo in the fall (daily practices, 10 games and 2 tournaments) and swimming in the spring (daily practices and 5 meets). These activities currently occur at Gates Pool on the main campus. Noise sources during swim meets include the voices of the coaches and cheering from spectators and teammates. Based on observations and acoustical measurements of a high school swim meet at another facility, the voices of the teammates cheering at the edge of the pool are the dominant noise source while the spectators in the stands are much quieter. There is also the sound of the starting buzzer and announcements before each race over the PA system. During water polo games, the noise sources are similar with voices and buzzers. There are also referee whistles.

Based on the configuration of the proposed pool area, measurements of a swim meet at another facility, and measurements of a water polo match at Menlo College, typical maximum noise levels from voices, whistles, PA and buzzers will be approximately 55 dBA at the west property line and 48 dBA at the north property line.

Tennis

The six existing tennis courts will be replaced with a total of 10 new tennis courts as part of the Project. With the Project, the Menlo School tennis activity that is presently occurring at Wunderlich Courts will be moved to the Project site. During the fall and spring, High School tennis practice with 34 participants would occur from 3 to 6 PM during the weekdays. There would also be 32 tennis matches during this time along with tennis clinics on Saturdays (during the school year) and on weekdays (during the summer). The average noise level generated when all the courts are being used will increase by 2.6 dBA between the existing and proposed conditions.

Parking Lot

A new parking lot will be located along El Camino Real. The noise from cars using the parking lot, including cars starting and doors closing, will be comparable to or less than the noise from the traffic on El Camino Real. Therefore, the parking lot noise will be a negligible contribution to increased future noise levels.

Garbage Facilities

The northwest corner of the site is currently used by the College for garbage storage and collection. With the Project, this use will be relocated to the College campus. Therefore, the periodic noise associated with filling and emptying dumpsters as wells as vehicles accessing the site via the service road along the west property line will be largely eliminated as part of the Project. Trash generated from the field complex itself will be picked up once or twice a week by vehicles using the service road along the west property line, which will only extend about halfway into the site. Because of its infrequent nature, the noise reduction from the decrease in garbage activities would have a negligible effect on the long-term noise exposure for the nearby residences.

HVAC Noise at Existing Homes

The Project includes new buildings at the baseball fields that would be as close as 54 feet to the west property line and 45 feet to the north property line. The new Aquatics Buildings will be about 400 feet from the residential property lines. These buildings will have HVAC (heating ventilation and air-

conditioning) equipment such as exhaust fans and outdoor condensers. At this time, specific details of the equipment such as type and location are not known.

The Project applicant is required to achieve Town's Noise Ordinance standards and according to the project statement dated September 4, 2012, the new buildings will be designed so that mechanical equipment noise is less than the ambient and is not heard in the neighboring residential properties. Since the mechanical noise would be designed to comply with the Town's Noise Ordinance standard of 60 dBA during the daytime and 50 dBA at night and would be less than the ambient, HVAC noise would not contribute to increased noise levels at property lines. The allowable noise level from HVAC would not be modified by the Project's Noise Ordinance amendment which applies only to "athletic activities".

Summary of Changes in Existing Noise Levels due to Future Cartan Field Athletic Activities

The effect of the Project on noise levels in the study area is complex because of the wide variety of noise sources and the various aspects of the Project. Some elements of the Project, such as the changes in field locations and increase in spectators, can affect the property line noise levels during each game or practice. Other aspects of the Project, such as increasing the number of games or the duration of practices, will not change the noise levels during that specific activity but will increase the overall noise exposure at the property lines over time.

To help describe the effect of the Project, the existing and future noise levels are compared in two tables. **Table 9.5** shows the average noise level (Leq) during various activities that occur on the site. These activity averages provide a sense of changing noise levels that will be experienced during games and practices. **Table 9.6** shows the Lmax noise levels, which relates to the noise ordinance definition of noise levels as "…the maximum continuous sound level or repetitive peak level…" These Lmax levels represent the repetitive peak levels as noise levels would vary a lot over the course of a particular athletic activity. Note that these tables exclude ambient (non-field) noises such as traffic to allow for a direct comparison between the existing and future noise from activities occurring on the site.

Table 9.5: Existing and Future Average Noise Level (Leq) during Activities (without ambient noise)

Source	L_{eq} (dBA) at North Property Line			L_{eq} (dBA) at West Property Line		
	Existing	Future	Increase with Project	Existing	Future	Increase with Project
Football Games	67.5	74.5	7.0	66.5	60.4	-6.1
Soccer or Lacrosse Games	59.1	66.1	7.0	58.1	52.0	-6.1
Football, Soccer or Lacrosse Practice	50.1	56.4	6.3	49.1	32.5	-16.6
Baseball Games	64.3	52.2	-12.1	62.9	64.4	1.6
Baseball Practice	56.3	44.2	-12.1	54.9	56.4	1.6
Swim Meets	NA	36.3	NA	NA	43.1	NA
Water Polo Matches	NA	34.0	NA	NA	40.8	NA
Aquatics Practices	NA	31.3	NA	NA	38.1	NA
Tennis – All Courts In Use	30.2	32.8	2.6	32.1	34.7	2.6

NA stands for Not Applicable and is used in this table when uses do not currently occur on the site.

Table 9.6: Existing and Future Typical Maximum Noise Levels during Activities with Project

Source	Typical L_{max} (dBA)			
	Northern Properties		Western Properties	
	Existing	Future with Project	Existing	Future with Project
Football Games	82	89	81	75
Soccer or Lacrosse Games	74	81	73	67
Football, Soccer or Lacrosse Practice	65	71	64	47
Baseball Games	72	60	71	73
Baseball Practice	66	53	64	64
Swim Meets	NA	50	NA	56
Water Polo Matches	NA	47	NA	55
Aquatics Practices	NA	39	NA	46
Tennis – All Courts In Use	43	46	45	48

NA stands for Not Applicable and is used in this table when uses do not currently occur on the site.

Table 9.7 shows the annual average CNEL from the existing and proposed activities. The CNEL includes games and practices as well as increases associated with the number of games and spectators. In **Table 9.7**, the effect of the ambient noise levels (such as traffic) is also considered. Averaging the CNEL over the course of a year allows the analysis to consider the cumulative effect of sports that do not occur at the same time, or during the same season. It also helps to account for the fact that individual sports do not occur year round. This technique is standard for aviation noise assessments where average annual CNEL is used to account for the fact that air traffic patterns vary depending on wind direction which changes over the course of a year.

Table 9.7: Existing and Future Average Annual Noise Level (CNEL), dBA

Noise Source	North Property Line			West Property Line		
	Existing	Future	Increase with Project	Existing	Future	Increase with Project
Football/Soccer/Lacrosse	46.3	54.2		45.3	40.1	
Baseball	49.7	36.9		47.9	50.0	
Aquatics	NA	21.1		NA	27.9	
Tennis	15.2	22.3		16.8	23.9	
Total Sports	51.3	54.3		49.8	50.5	
Ambient	58.2	58.2		60.0	60.0	
Total Sports with Ambient	59.0	59.7	0.7	60.4	60.5	0.1

NA stands for Not Applicable and is used in this table when uses do not currently occur on the site.

COMPATIBILITY OF PROPOSED USE WITH AMBIENT NOISE LEVELS

Impact Noise-1: **Noise and Land Use Compatibility.** The Project site is exposed to exterior noise levels considered "conditionally acceptable" by the Atherton General Plan. Because the uses proposed are active and the nature of use at the site will not change with the Project, the impact of ambient noise levels on the proposed use is ***less-than-significant***.

Based on the ambient noise measurements at the Project site, the ambient CNEL is approximately 60 dBA, whereas the Town of Atherton's General Plan sets 55 dBA as the maximum "normally acceptable" for school uses. The ambient noise is due mostly to traffic on nearby roadways. Future traffic volumes are expected to increase this noise exposure by less than 1 dBA. This noise exposure is in the lower end of the "conditionally acceptable" range for schools under both the existing and future conditions. According to the Town of Atherton's General Plan Noise Standards, if a use is proposed in a "conditionally acceptable" noise range, "a detailed acoustical study should be undertaken to set forth design features that will reduce exterior noise levels and/or tor construction to control the amount of exterior noise reaching interior use spaces".

The current Project is an upgrade to an existing use as opposed to a proposed new use. In addition, future uses at the Project site will be comparable to the existing uses and are active uses rather than passive uses that require a particularly quiet environment. Because the existing noise level does not seem to be adversely affecting the existing uses and the future ambient noise level increase will not be noticeable, it can be concluded that no additional design features or measures are necessary to achieve acceptable exterior and interior noise levels at the Project uses.

ACTIVITY-SPECIFIC NOISE LEVELS AT ADJACENT USES

Impact Noise-2: **Activity-Specific Noise Level Increases.** The proposed Project would result in noticeably increased noise levels above Noise Ordinance limits from games on the football/soccer/lacrosse field at three residential properties at the northern boundary of the Project site and the noise levels would exceed the Noise Ordinance limits. This is a ***significant impact***. Noise increases for other activities and at other boundaries would be less than significant.

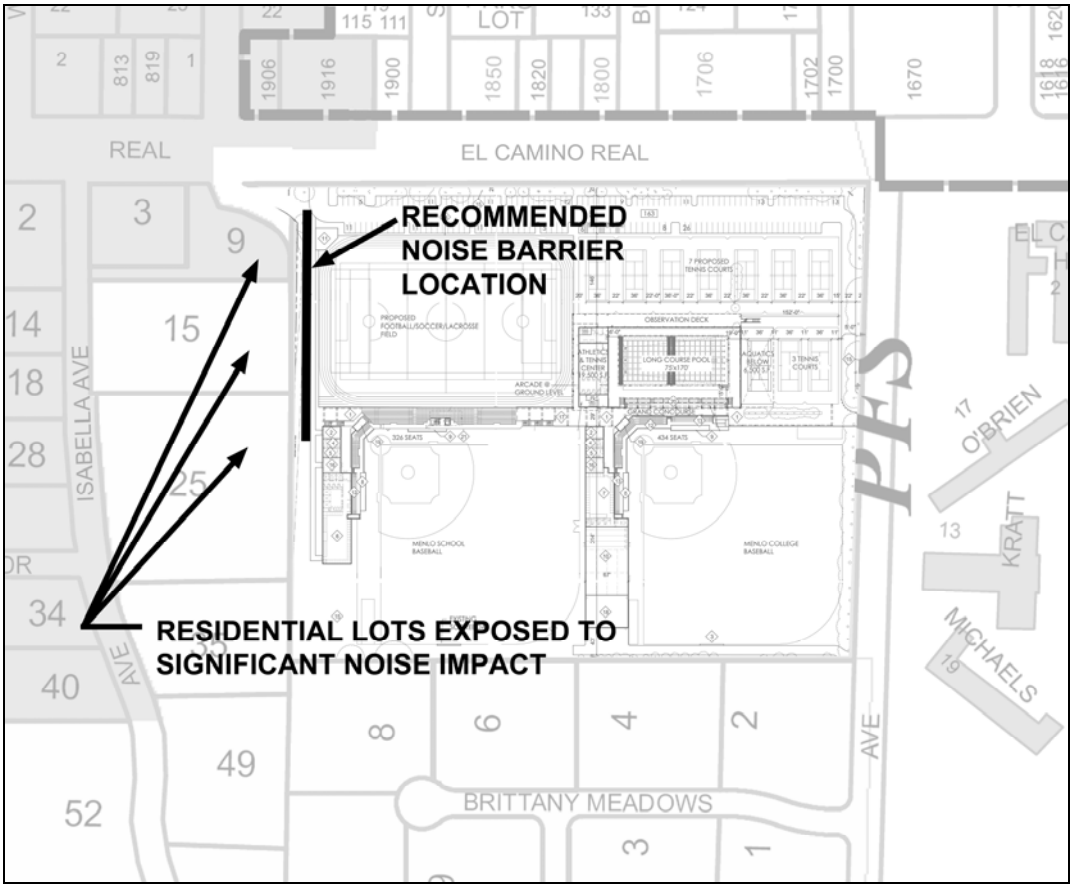
Table 9.6 shows maximum repetitive noise levels (Lmax) for the various uses at the site. As shown in this table, typical maximum (Lmax) noise levels from activities at the site would mostly remain below the 75 dBA maximum under the Project, with the exception of activities on the multi-use field, including football, soccer and lacrosse games. The Aquatics Center, which would be a new use at the site generating noise from cheering, buzzers and whistles, is not expected to exceed 60 dBA at nearby residential properties, due in part to shielding effects of proposed buildings.

The highest Lmax levels at the western boundary would be at or below 75 dBA under the Project, which could occur during football games (75 dBA) and baseball games (73 dBA). All other activities would have lower maximum noise levels at the western properties. Therefore, future noise levels would not exceed the Town's Noise Ordinance at residences to the west of the Project.

Football, soccer and lacrosse games will generate repetitive maximum noise levels of greater than 75 dBA at the nearby residences to the north with the Project, and this is true for football games under existing conditions as well. However, with the Project, the football/soccer/lacrosse field and spectator seating will move closer to the north property line, which will noticeably increase noise levels at three residential properties along the north property line closest to the football/soccer/lacrosse field. As shown in Table 9.5, the increase during games in Leq is 7.0 dBA which is greater than the threshold of 3.0 dBA. Therefore, increased football, soccer and lacrosse game noise at three residential properties to the north is a ***significant impact***.

Figure 9.5 shows the location of the three residential lots that would be exposed to the significant noise impact. The noise impact would be greater near the north end of the field and grandstand. The west side of the westernmost lot would be exposed to a less severe noise impact since it would benefit from the acoustical shielding provided by the new building adjacent to the School baseball field.

Figure 9.5: Location of Residential Lots Exposed to Significant Noise Impact and Recommended Noise Barrier Location



This significant impact is a result of games on the football/soccer/lacrosse field. Noise levels from daily practices on this multi-use field will be within Noise Ordinance limits (Lmax of 71 dBA), though there will be more of them. The overall increase in ambient noise over time, as opposed to the noise from specific activities discussed above, is addressed in Impact Noise-3, which considers noise level as well as frequency and duration of all the various activities.

Mitigation Measure

Noise-2a: **Noise Barrier.** A noise barrier shall be constructed along the north property line to reduce noise from the activities at the football/soccer/lacrosse fields. This noise barrier shall be a wall reaching a height of at least 8 feet, as determined through coordination with the Town. While the increase in noise from the field would be effectively reduced, increased noise from the grandstands during games would not be reduced below significance levels and the impact would remain ***significant and unavoidable***.

Table 9.8 shows the average noise levels with and without the 8-foot wall specified in Mitigation Measure Noise-2a. The wall would be effective at reducing noise from noise sources at field level, as demonstrated by the noise level reduction shown for practices.

Table 9.8: Average Noise Level (Leq, dBA) at the Residences to the North from Activities on the Football/Soccer/Lacrosse Field with and without an 8-foot high Wall at the North Property Line

Noise Source	Existing L_{eq}	Future with Project Without Wall		Future with Project With 8-Foot Wall	
		Future L_{eq}	Increase over Existing	Future L_{eq}	Increase over Existing
Football Game – High Attendance	67.5	74.5	7.0	72.8	5.4
Football, Soccer or Lacrosse Practice	50.1	56.4	6.3	51.0	0.9

However, much of the noise sources during games will be elevated (e.g. cheering from the crowds in the grandstand and PA speakers) and the nearby homes have upper stories, so the acoustical effectiveness of a wall would be limited unless it is very tall (at least 25 to 30 feet). Even if physically feasible (no engineering study was performed), it is our understanding that such a high freestanding wall would not be allowed under Atherton regulations and is therefore considered infeasible.

Therefore, the 8-foot sound wall specified in Mitigation Measure Noise-2a would reduce noise levels at nearby residences during activities on the football/soccer/lacrosse field though impacts during games, while reduced by the mitigation, would remain ***significant and unavoidable***.

Mitigation Measure Noise-2b: **PA System Design.** The PA systems shall be designed to minimize the 'spilling' of sound in the direction of the nearby homes with a goal of limiting the PA sound levels to 60 dBA at the residential property lines. Design characteristics can include but are not limited to the following:

- Use "distributed" sound systems to reduce the overall sound power levels by covering the spectator area with many directional speakers at relatively low sound levels rather than a few wide dispersion speakers at high sound levels.
- The speakers should be oriented away from the nearest residential property lines, as practical to create a directional system. Where typical outdoor sound systems place two or more speakers at one location, each oriented in different directions to cover more of the area, the Project PA systems should use additional speaker locations so that the orientation of the speakers can be consistently away from the nearest residences.
- Minimize the PA coverage of the fields, since these speakers would tend to have the longest distances to cover and, therefore, have the highest sound levels.
- When the grandstands are not full, turn off speakers that cover empty seating areas.
- Locate the pool timing buzzer close to the swimmers and below the elevation of the adjacent grade. The noise from the pool area will generally be attenuated by

the buildings and walls around the pool. This attenuation should be maximized for the buzzer by locating it as close the pool level as possible.

Mitigation Measure Noise-2b is recommended for all PA systems at the Project to reduce the level of Project-generated noise and reduce annoyance at nearby residences. Since the PA systems are not yet designed, it is not possible to quantify the potential reductions resulting from this mitigation measure. However, because of the other dominant noise sources, such as cheering spectators, this measure would contribute to reducing Impact Noise-2, but would not reduce the impact below significance levels.

Mitigation Measure Noise-2c: **Grandstand Seating Locations.** Empty seats in the grandstands during games shall be grouped at the northern end, as practical. Because most events at the field will not fill the grandstands, reserving vacant seating at the northern end of the grandstands whenever possible would lessen the noise of cheering crowds at the residential properties to the north for all but the largest events.

The grandstand of the football/soccer/lacrosse field will be the seating area for both the home and visiting spectators. Since most games will not fill the grandstands, lower noise levels would be generated at the north property line if the empty seats are concentrated at the north end of the grandstand, with the cheering crowd on the farther end. Mitigation Measure Noise-2c would tend to lessen the spectator noise levels at some of the games, but would not reduce Impact Noise-2 below significance levels.

No additional feasible mitigation has been identified that could further reduce Impact Noise02, which would remain ***Significant and Unavoidable*** under the Project.

An alternative to the Project that involves relocation of different uses on the site to reduce noise increases at the residential properties to the north is explored in Chapter 12: Alternatives.

PERMANENT AMBIENT NOISE INCREASES AT ADJACENT USES

Impact Noise-3: **Ambient Noise Level Increases.** The proposed Project would not cause a substantial permanent increase in ambient noise levels in the Project vicinity above levels without the Project. This is a ***less than significant*** impact.

To assess the permanent increase in noise resulting from the Project, the annual average CNEL noise descriptor as shown in **Table 9.7** is used. This descriptor takes into account the periods when the fields are in use as well as the periods when they are not in use. The long-term average allows the range of existing and proposed activities, including practices and games, and their relative frequencies and durations to be included in the calculations of existing and future conditions. It also takes into account increased noise associated with certain activities, such as swimming and summer tennis and baseball, which are not currently taking place at the Project site.

Since the future CNEL at the residential property lines are near a CNEL of 60 dBA, the threshold for a significant increase in noise is 3 dBA. According to **Table 9.7**, the increase in noise levels due to the Project would be 0.7 dBA or less at the northern property line and would actually reduce noise levels at least 0.1 dBA at the western property line. Therefore, the impact related to substantial permanent increase in ambient noise levels is less than significant.

TEMPORARY NOISE INCREASES AT ADJACENT USES

Impact Noise-4: **Construction-Period Noise.** Construction activities will create audible noise at the Project site and adjacent properties. However, construction noise is temporary and the construction hours will conform to the Town's Noise Ordinance. This is a ***less than significant*** impact.

Construction activities would involve demolition, excavation, grading, and facilities development. Some of the equipment that would be used during construction includes excavators, backhoes, graders, dump trucks, loaders, compactors, dozers, pavers, concrete trucks, and other heavy machinery. **Table 9.9** presents typical construction equipment noise levels at a reference distance of 50 feet. The noisier activities tend to occur during the demolition, grading and foundation phases of construction. Construction would occur from 8 AM to 5 PM Monday through Friday and is expected to last for 12 to 14 months.

Most of the noisier machinery used in the construction of the Project would produce maximum noise levels of up to 85 dBA at a distance of 50 feet. This machinery includes concrete mixer trucks, cranes, bulldozers, dump trucks, graders, pavers and pneumatic tools. It is expected that there will be very limited use of impact tools such as jackhammers and hoe rams and no pile driving is expected to occur.

Noise levels decrease with distance from the construction equipment at a rate of 6 dBA per doubling of distance. Since the nearest homes are about 50 feet from the property line, the construction noise levels at the homes will be up to 85 dBA when the equipment is at the property line. When the equipment is near the center of the Project site, the noise levels will be about 67 dBA at the nearest residential property line.

The nearest College buildings are about 100 feet south of the edge of the Project so construction noise levels would be about 79 dBA when the equipment is working at the south property line. Exterior noise at this level could potentially interfere with classes in the nearest buildings. Since this area will primarily be tennis courts and a baseball outfield, the duration of the work will be relatively short compared to excavation of the pool or the construction of buildings. The construction activities will be more extensive for the pool and baseball facilities where new buildings will be constructed. Since these new buildings will be about 400 feet from the College buildings, the noise level from construction will be about 67 dBA and generally not interfere with classes when windows are closed.

Because the effect of construction noise on the residential neighbors and college buildings is temporary and the construction hours will conform to the Town's Noise Ordinance, construction noise is a less than significant impact.

Table 9.9: Typical Construction Equipment Noise Levels

Equipment Description	L_{max} (dBA) at 50 feet
Backhoe	78
Compactor	83
Compressor	78
Concrete Mixer Truck	79
Concrete Pump Truck	81
Crane	81
Bulldozer	82
Dump Truck	76
Excavator	81
Front End Loader	79
Generator	81
Grader	85
Hoe Ram	90
Jackhammer	89
Paver	77
Pneumatic Tools	85
Roller	80
Scraper	84
Tractor	84
Warning Horn	83
Welder/Torch	74
Source: FHWA Roadway Construction Noise Model, 2006	

While the construction noise would not rise to the level of a significant environmental impact and does not require mitigation, the following is a list of "good neighbor" noise control measures that are recommended (though not required) for inclusion in construction contracts:

Recommended Construction Noise Disturbance Measures

- Notify neighboring residences of the schedule for heavy construction activities (such as demolition, grading and foundations).
- To the extent practical, schedule the noisiest phases of construction (demolition, grading and foundations) during periods when students will not be occupying the closest classrooms to the construction areas (e.g. summer and seasonal breaks).
- Ensure that mufflers in good condition are installed on internal combustion engine-equipment;
- Locate stationary equipment such as generators and compressors away from nearby sensitive land uses (i.e., residences and classrooms).
- Perform noisy procedures such as cutting steel and assembling steel with impact tools at an off-site location, as practicable.
- Designate a site noise disturbance coordinator whose name will be prominently displayed in signage on the site. The coordinator will be responsible to address neighborhood concerns regarding noise and take appropriate actions, where feasible, to reduce noise levels. For example, a 12-foot tall continuous plywood barrier between the locations of long-duration heavy construction activities and residents or occupied school classrooms could reduce annoyance.

GROUNDBORNE NOISE AND VIBRATION

Impact Noise-5: **Groundborne Noise and Vibration.** The proposed Project could result in exposure of persons to excessive groundborne vibration during construction activities, but would occur only for very limited times and would not exceed vibration damage risk levels. This is a ***less than significant*** impact.

Table 9.10 presents typical vibration levels from the equipment likely to be used at the Project. The buildings will have spread footings or drilled piers so that no pile driving will be used.

Table 9.10: Vibration Levels for Construction Equipment at Various Distances

Equipment	Vibration Velocity Level, VdB			
	25 Feet	50 Feet	75 Feet	100 Feet
Vibratory Roller	94	85	80	76
Large Bulldozer	87	78	73	69
Caisson Drilling	87	78	73	69
Loaded Trucks	86	77	72	68
Jackhammer	79	70	65	61
Small Bulldozer	58	49	44	40

Note: VdB = RMS Vibration Velocity Level expressed in decibels re 1 micro-inch per second.
Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, Final Report, 2006

The Project demolition and construction activities will generally occur at distances of over 75 feet from the nearest residential buildings and groundborne vibration levels would be 80 VdB or less. Vibration levels could reach 85 VdB when a vibratory roller is at a property line near an existing building and exceed the FTA vibration impact criteria, but would not exceed vibration damage risk thresholds. Since this vibration level would occur for very limited times, if at all, vibration is a less than significant impact.

AIRCRAFT NOISE

The Project site is not located within two miles from an airport or airstrip. There would be ***no impact*** related to aircraft noise.

CUMULATIVE NOISE IMPACT

There are no other known construction projects in the immediate vicinity that would occur at the same time as Project construction.

Ambient noise levels in the vicinity are due largely to traffic noise. While area traffic and related noise would increase, the limited increase in Project-related traffic to the area would not contribute considerably to cumulative increases in traffic noise.

The Project includes a Noise Ordinance amendment that would increase allowable maximum repetitive noise levels from 60 dBA to 75 dBA during certain time periods. However, this ordinance change does not reflect the actual increase in noise levels at the site, which are at times already above the 60 dBA level under existing conditions. The actual increase in noise levels has been assessed for the Project based on changes in activities and field location. The proposed Noise Ordinance amendment would not apply to any other locations so there would be no opportunity for additional cumulative impacts resulting from the ordinance change.

The Project would not have additional noise impacts that are individually limited but cumulatively considerable.

This page intentionally left blank

10

TRANSPORTATION AND CIRCULATION

INTRODUCTION

This chapter of the Draft EIR describes the transportation and traffic conditions on the Project site and in the surrounding area. It also evaluates the potential for traffic impacts associated with implementation of the proposed Project. A regulatory framework is provided in this section describing applicable agencies and regulations related to the proposed Project.

The traffic analysis and this chapter were prepared by Crane Transportation Group.

Preparation of this section used data from a variety of sources. New (2013) traffic counts were conducted by Crane Transportation Group on a weekday and a Saturday at intersections serving the Project site. In addition, where appropriate, excerpts and findings from the following studies were also utilized: Sacred Heart School Master Plan Draft EIR, by Christopher Joseph Associates, 2010; Atherton Library Building Project Draft EIR, by LSA, March 2012; the City of Menlo Park Circulation System Assessment (CSA) Report, January 2013; the Menlo Park El Camino Real/Downtown Specific Plan Draft EIR, by ESA, April 2011, and the Memo Report "Traffic Count of November 10 Menlo College Football Game at Cartan Field," by Hexagon Transportation Consultants, Inc., November 16, 2012.

Traffic data utilized for this report are included in Appendix E.

A separate Parking Study, prepared by Crane Transportation Group, is also included in Appendix F.

KNOWN CONCERNS

During the Scoping Meeting, concerns related to the traffic and circulation impacts of this Project were raised about the safety of the proposed driveway on El Camino Real, the potential for U-turns at Isabella Avenue to reach the new driveway, resultant queuing in the northbound El Camino Real left turn lanes at Isabella and Alejandra avenues, the potential for spectator parking on Isabella Avenue during large games, the desire to reduce sports field-related traffic passing through the neighborhood, the need to coordinate with Caltrans and adequacy of on-site circulation. These concerns were also expressed in letters from neighbors (or their representatives).

Caltrans submitted a letter listing elements to include in the traffic study and noted an encroachment permit would be required for work along El Camino Real, which is a state right of way.

These concerns have been addressed in this analysis.

REGULATORY SETTING

FEDERAL REGULATIONS

There are no federal transportation regulations applicable to the proposed Project.

STATE REGULATIONS

Caltrans is responsible for planning, designing, constructing, and maintaining all interstate freeways and state routes. Caltrans requirements are described in their 2002 *Guide for the Preparation of Traffic Impact Studies*, which covers the information needed for Caltrans to review the impacts on roadways under Caltrans' jurisdiction. El Camino Real (State Route 82) is a roadway in the study area that is under Caltrans' jurisdiction. The Project will be required to obtain necessary permits from Caltrans for the proposed driveway on this roadway.

Caltrans advocates enhancements to state facilities, such as SR 82 (El Camino Real) that promote a community's vision and needs. Recognizing that meeting these needs may require flexibility, Caltrans has developed a process for approving alternative designs to their standards. This process evaluates each requested deviation for its potential effects on highway safety, regional needs, and the surrounding environment. Deviations from Caltrans policy or standards to meet community requests may require approval of an exception to a policy or nonstandard feature.

REGIONAL REGULATIONS

<u>San Mateo City/County Association of Governments (C/CAG)</u>

C/CAG serves at the Congestion Management Agency (CMA) of San Mateo County.[1] As the County's CMA, C/CAG is responsible for managing the county's blueprint to reduce congestion and improve air quality. C/CAG is authorized to set state and federal funding priorities for transportation improvements affecting the San Mateo County Congestion Management Program (CMP) transportation system. El Camino Real is the only roadway within the Plan area that is designated as a part of the CMP roadway system. C/CAG forwards on the County's prioritized list of projects to MTC for incorporation into the regional list to receive state and federal funding.

Since the proposed Project is expected to generate less than 100 new PM peak hour trips, it is therefore not subject to analysis under San Mateo County's Congestion Management Program.

<u>San Mateo County Transit District (SamTrans)</u>

SamTrans serves as primary transit operator for San Mateo County and is responsible for the development, operation, and maintenance of the transit system within the county. SamTrans operates over 50 bus lines in addition to shuttle and paratransit service.

<u>Metropolitan Transportation Commission (MTC)</u>

The MTC is the Bay Areas regional transportation planning agency and federally-designated Metropolitan Planning Organization (MPO). MTC is responsible for preparing the Regional

[1] City/County Association of Governments of San Mateo County, San Mateo County Congestion Management Program 2009 (September, 2009).

Transportation Plan, a comprehensive blueprint for the development of mass transit, highway, airport, seaport, railroad, bicycle, and pedestrian facilities within the nine county Bay Area region. The Regional Transportation Plan is a 20-year plan and is updated every three years to reflect new planning priorities and changing projections of growth and travel demand. The long-range plan must be based on a realistic forecast of future revenues and taken as a whole; the improvement projects included must help improve regional air quality. MTC also screens requests from local agencies for state and federal grants for transportation projects to determine compatibility with the Regional Transportation Plan.

TOWN OF ATHERTON

The following General Plan Circulation Element goals, objectives and policies are relevant to transportation and circulation at and in the vicinity of the Project site:

- Circulation goal: To develop a circulation system that is compatible with the needs of various land uses planned within the Town of Atherton.
    - Objective 2.221: To preserve the streets of Atherton as scenic routes.
    - Objective 2.222: To minimize the encroachment of the circulation network on the residential and open space uses which prevail throughout most of the community.
        - Policy 2.271: No street under the jurisdiction of the Town shall be more than two lanes in width.
        - Policy 2.421: All streets and highways in the Town of Atherton shall be preserved as scenic routes.
        - Policy 2.425: On-street and visible off-street parking of vehicles and other means of transportation shall be carefully controlled.
        - Policy 2.523: The Town desires to limit public bus service to the use of El Camino Real and Middlefield Road.
        - Policy 2.721: No new vertical curbs or sidewalks shall be constructed, as their presence would be incongruent with existing development.

The Town of Atherton does not have published significance criteria for circulation impacts. As such, the Town uses the significance criteria utilized by the nearby City of Menlo Park[2] and the County as well as City/County Association of Governments of San Mateo County (C/CAG) when evaluating the potential transportation impacts of development occurring within the Town. Generally, a project would have a significant effect on the environment if it would cause an increase in traffic that is substantial in relation to the existing traffic load (i.e., result in a substantial increase in congestion at intersections), or change the condition of an existing street (i.e. through street closures, changing direction of travel) in a manner that would substantially affect access or traffic load and capacity of the street system.

ENVIRONMENTAL SETTING

INTERSECTION ANALYSIS METHODOLOGY

Transportation engineers and planners commonly use a grading system called level of service (LOS) to measure and describe the operational status of the local roadway network. LOS is a description of the

[2] Menlo Park, City of, 2012. *Transportation Impact Analysis Guidelines*. Website: www.menlopark.org/departments/tm/trn_tiag.pdf (accessed February 14, 2013).

quality of a roadway facility's operation, ranging from LOS A (indicating free flow traffic conditions with little or no delay) to LOS F (representing oversaturated conditions where traffic flows exceed design capacity, resulting in long queues and delays). Intersections, rather than roadway segments between intersections, are almost always the capacity controlling locations for any circulation system.

Minimum Acceptable Criteria

Town of Atherton

The Town of Atherton has no minimum acceptable level of service standards. However, they are using Menlo Park standards in this study for consistency of evaluation results. LOS D is the poorest acceptable operation at public road intersections evaluated in this study.

City of Menlo Park

The City of Menlo Park Transportation Impact Analysis Guidelines uses LOS D as the poorest acceptable operation at City arterial intersections or for approaches to unsignalized state-controlled intersections. LOS C is the poorest acceptable operation at all collector and local street intersections.

Standards of Significance for Intersections

The criteria for determining if the proposed Project would create a significant adverse impact on intersections are described below.

- A project is considered to have a potentially "significant" traffic impact if the addition of project traffic causes an intersection on a collector street operating at LOS A through C to operate at an unacceptable level (LOS D, E or F) or have an increase of 23 seconds or greater in average vehicle delay, whichever comes first. A potentially "significant" traffic impact would also occur if a project causes an intersection on arterial streets or local approaches to State-controlled signalized intersections operating at LOS A through D to operate at an unacceptable level (LOS E or F) or have an increase of 23 seconds greater in average vehicle delay, whichever comes first.

- A project is also considered to have a potentially "significant" traffic impact if the addition of project traffic causes an increase of more than 0.8 seconds (4 seconds for intersections in the Town of Atherton) of average delay to vehicles on all critical movements for intersections operating at a near term LOS D through F for collector streets and at a near term LOS E or F for arterial streets. For local approaches to State-controlled intersections, a project is considered to have a potentially "significant" impact if the addition of project traffic causes an increase of more than 0.8 seconds of delay to vehicles on the most critical movements for intersections operating at a near term LOS E or F.

Signalized Intersection Methodology

For signalized intersections, the 2000 Highway Capacity Manual methodology was utilized. With this methodology, operations are defined by the level of service and average control delay per vehicle (measured in seconds) for the entire intersection. For a signalized intersection, control delay is the portion of the total delay attributed to traffic signal operation. This includes delay associated with deceleration, acceleration, stopping, and moving up in the queue. **Table 10.1** summarizes the relationship between delay and LOS for signalized intersections.

Table 10.1: Signalized Intersection LOS Criteria

Level of Service	Description	Average Control Delay (Seconds Per Vehicle)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	≤ 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and/or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.1 to 80.0
F	Operation with delays unacceptable to most drivers occurring due to oversaturation, poor progression, or very long cycle lengths.	> 80.0

Source: Transportation Research Board, 2000 Highway Capacity Manual.

Unsignalized Intersection Methodology

For unsignalized (all-way stop-controlled and side-street stop-controlled) intersections, the 2000 Highway Capacity Manual methodology for unsignalized intersections was utilized. For side-street stop-controlled intersections, operations are defined by the level of service and average control delay per vehicle (measured in seconds), with delay reported for the stop sign controlled approaches or turn movements, although overall delay is also typically reported for intersections along state highways. For all-way stop-controlled intersections, operations are defined by the average control delay for the entire intersection (measured in seconds per vehicle). The delay at an unsignalized intersection incorporates delay associated with deceleration, acceleration, stopping, and moving up in the queue. **Table 10.2** summarizes the relationship between delay and LOS for unsignalized intersections.

Table 10.2: Unsignalized Intersection LOS Criteria

Level of Service	Description	Average Control Delay (Seconds Per Vehicle)
A	Little or no delays	< 10.0
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays with intersection capacity exceeded (for an all-way stop), or with approach/turn movement capacity exceeded (for a side street stop controlled intersection)	> 50.0

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

Traffix (version 8.0) traffic analysis software was used to determine intersection levels of service (LOS) and is based on the "Operations" methodology of the year 2000 Highway Capacity Manual and is also consistent with the City of Menlo Park's methodology.

Signalization Analysis Methodology

Traffic signals are used to provide an orderly flow of traffic through an intersection. Many times they are needed to offer side street traffic an opportunity to access a major road where high volumes and/or high vehicle speeds block crossing or turn movements. They do not, however, increase the capacity of an intersection (i.e., increase the overall intersection's ability to accommodate additional vehicles) and, in fact, often slightly reduce the number of total vehicles that can pass through an intersection in a given period of time. Signals can also cause an increase in traffic accidents if installed at inappropriate locations.

There are 9 possible tests for determining whether a traffic signal should be considered for installation. These tests, called "warrants", consider criteria such as actual traffic volume, pedestrian volume, presence of school children, and accident history. The intersection volume data together with the available collision histories were compared to warrants contained in the Manual on Uniform Traffic Control Devices (MUTCD), Federal Highway Administration, 2010, California Supplement, which has been adopted by the State of California as a replacement for Caltrans Traffic Manual. Section 4C of the MUTCD provides guidelines, or warrants, which may indicate need for a traffic signal at an unsignalized intersection. As indicated in the MUTCD, satisfaction of one or more warrants does not necessarily require immediate installation of a traffic signal. It is merely an indication that the local jurisdiction should begin monitoring conditions at that location and that a signal may ultimately be required.

Warrant 3, the peak hour volume warrant, is often used as an initial check of signalization needs since peak hour volume data is typically available and this warrant is usually the first one to be met. Warrant 3 is based on a curve and takes only the hour with the highest volume of the day into account. Please see Appendix E for the warrant chart. To meet this warrant, a minimum of 100 to 150 vehicles per hour must approach the intersection on one of the side streets, depending upon the number of side street approach lanes and the number of lanes on the major street. It should also be noted that Warrant 3 has a second set of criteria based upon a combination of vehicle delay and volumes. This is typically referred to as the peak hour delay warrant.

EXISTING CONDITIONS

Roadways

Cartan Field is bordered by El Camino Real and Alejandra Avenue (see **Figure 10.1**). Subregional access to the Project site is provided by El Camino Real (State Route 82) and by Valparaiso Avenue about half a mile south of the site. Emilie Avenue provides a connection from Valparaiso Avenue to Alejandra Avenue to the west of the site. Isabella Avenue, to the north of Cartan Field, is also impacted by Cartan Field traffic during college football games.

For purposes of identification in this report, Valparaiso Avenue, Alejandra Avenue and Isabella Avenue are designated to run east-west, while El Camino Real and Emilie Avenue are designated to run in a north-south direction. Each roadway is briefly described below, while a schematic presentation of existing intersection approach lanes and control is presented in **Figure 10.2**.

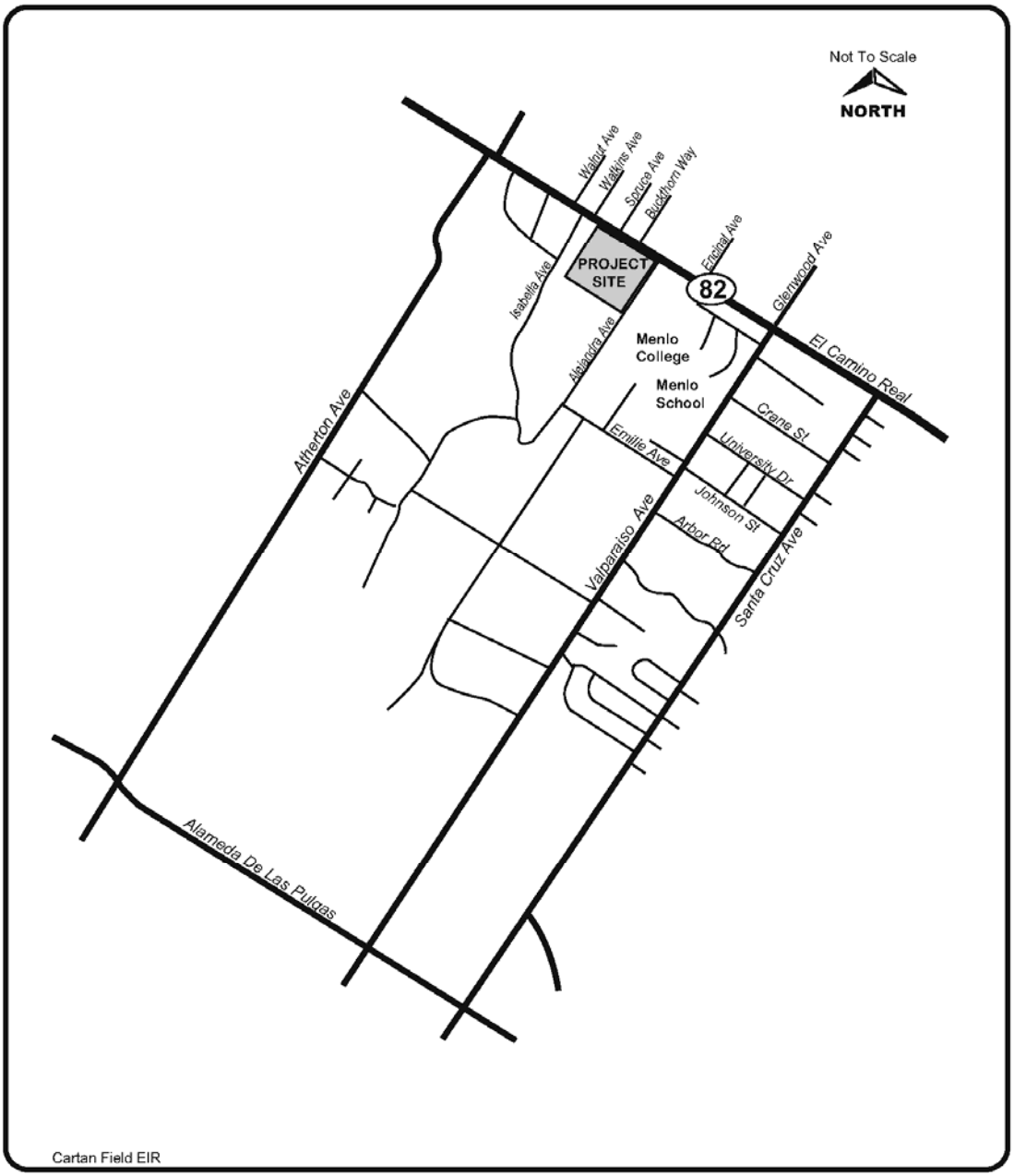


Figure 10.1: Area Map
Source: Crane Transportation

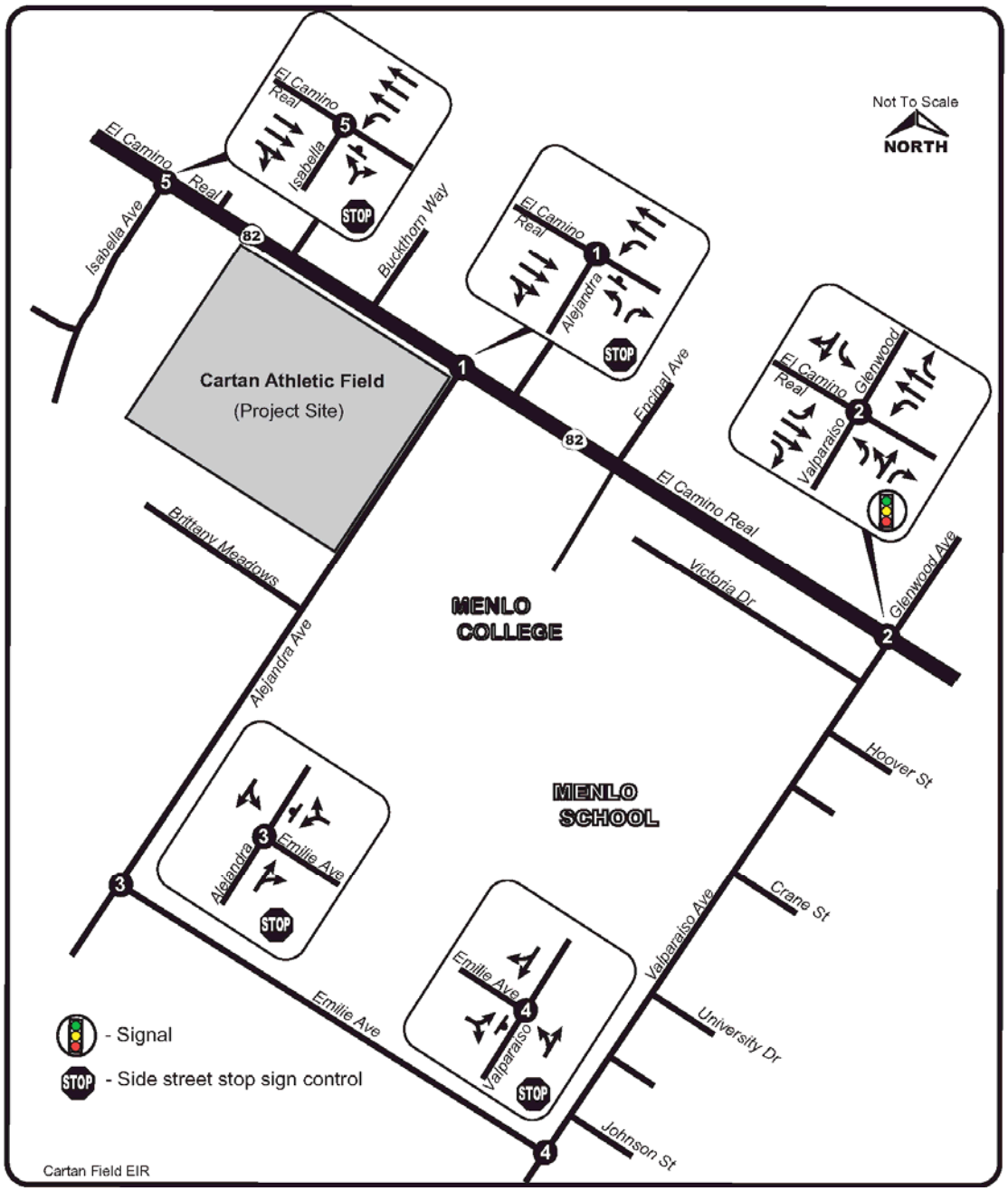


Figure 10.2: Existing Lane Geometrics and Intersection Control
Source: Crane Transportation

Alejandra Avenue is a two-lane roadway running along the south boarder of Cartan Field and the north border of the Menlo College and Menlo School campuses. The posted speed limit is 25 miles per hour and it is classified as a "local street" in the Town of Atherton. Alejandra Avenue is stop sign controlled on its two-lane approach to El Camino Real, it is lined by dirt/gravel or grass shoulders and centerline striping is not provided. A paved/all weather walkway is not provided along the north (Cartan Field) side of the street, while one is provided for a 680-foot segment on the south side of the street extending from just opposite the Cartan Field parking lot entrance westerly to a driveway serving the college entrance at the Wunderlich Athletic Field. A crosswalk is striped across Alejandra Avenue at the entrance to the Cartan Field parking lot. It extends into Cartan Field via the outbound lane of the field's parking lot driveway. Parking is prohibited on the north (Cartan Field) side of Alejandra Avenue from El Camino Real to the Brittany Meadows cul-de-sac. West of Brittany Meadows and along Brittany Meadows, on-street parking is allowed by permit only. On-street parking is also prohibited on the south side of Alejandra Avenue from El Camino Real to the driveway running adjacent to Wunderlich Field, with the exception of a 14-space bay with 90-degree stalls that are used for college campus parking.

Cartan Field has the following driveway connections to the local street system, both on Alejandra Avenue: A paved driveway serving the spectator parking lot is located 350 feet west of El Camino Real, while a second driveway for service vehicles only is located at the west end of Cartan Field, about 790 feet from El Camino Real.

El Camino Real (designated **State Route 82**), runs in a general north-south direction from the South Bay through most Peninsula cities. Adjacent to the Project site, El Camino Real is a five-lane divided arterial (three southbound and two northbound lanes) with a raised, landscaped median. Between the Project site and Valparaiso/Glenwood Avenue, El Camino Real continues with five lanes. El Camino Real narrows to a four-lane roadway south of Valparaiso/Glenwood Avenue and widens again to become a six-lane roadway south of Ravenswood/Menlo Avenue. El Camino Real also widens to six lanes north of the Project site in the vicinity of Isabella Avenue. On-street parking is prohibited on the west side of El Camino Real adjacent to and in the vicinity of Cartan Field. Also, there is no sidewalk/paved pathway adjacent to Cartan Field, but there is a sidewalk on the east side of the street. Left turn lanes are provided on the El Camino Real approaches to both Alejandra Avenue (90 feet long) and Isabella Avenue (50 feet long). Median refuge areas are also provided just north of Alejandra and Isabella avenues to assist left turn movements from both side streets to northbound El Camino Real.

Valparaiso Avenue is a two-lane roadway with Class II bike lanes. It forms the border between the Town of Atherton (on the north) and the City of Menlo Park (on the south). It is classified as a collector street by the Town of Atherton and a minor arterial by the City of Menlo Park. In the Project vicinity, Valparaiso Avenue is signal controlled at the El Camino Real and University Drive intersections, while Emilie Avenue is stop sign controlled on its approach to Valparaiso Avenue. Neither left nor right turn deceleration lanes are provided on the Valparaiso Avenue approaches to Emilie Avenue.

Emilie Avenue is a two-lane north-south street extending between Valparaiso Avenue and Alejandra Avenue. It is lined by Sacred Heart School and by residential uses. It has single lane stop sign controlled approaches to both Alejandra Avenue and Valparaiso Avenue. Emilie Avenue is classified as a "local street" in the Town of Atherton.

Isabella Avenue is a two-lane "local street" in the Town of Atherton. It extends westerly of El Camino Real and serves residential properties. Isabella Avenue is stop sign controlled on its single lane approach to El Camino Real.

Volumes

Crane Transportation Group conducted two weekday AM commute peak period (7:00-9:00) and four PM commute peak period (4:00-6:00) traffic counts in mid January 2013 at intersections in close proximity to Cartan Field.

Weekday AM peak hour counts used for analysis purposes were obtained from the Menlo Park CSA study (fall 2012 counts at El Camino Real/Valparaiso Avenue, El Camino Real/Encinal Avenue and Valparaiso Avenue/University Avenue). They were then compared to the Crane Transportation Group January 2013 counts as well as Crane Transportation Group 2009 counts conducted for the Sacred Heart EIR. The CSA fall 2012 counts were found to be the highest at common intersections and were utilized to adjust the Emilie Avenue and Alejandra Avenue January 2013 or 2009 counts to higher volume conditions found in the fall of 2012.

Weekday PM peak hour counts for analysis purposes were first obtained from the Menlo Park CSA study (fall 2012 counts at El Camino Real/Valparaiso Avenue, El Camino Real/Encinal Avenue and Valparaiso Avenue/University Avenue). These counts were then compared to January 2013 counts by Crane Transportation Group at El Camino Real/Valparaiso Avenue, El Camino Real/Alejandra Avenue, Valparaiso Avenue/Emilie Avenue and Emilie Avenue/Alejandra Avenue. It was found that the fall 2012 CSA counts were higher than those conducted in January 2013 at the El Camino Real/Valparaiso Avenue intersection and at intersections adjacent to those counted in January 2013. CSA fall 2012 counts were therefore utilized to develop a system of existing weekday PM peak hour volumes at the four Project analysis intersections.

Saturday turn movement counts were conducted by Crane Transportation Group in January 2013 from 11:00 AM to 5:00 PM at the El Camino Real/Alejandra Avenue, El Camino Real/Isabella Avenue and Alejandra Avenue/Emilie Avenue intersections. In addition, counts were also obtained for the El Camino Real/Alejandra Avenue intersection during a college football Saturday on November 10, 2012 (homecoming). The hour with the highest number of turn movements from El Camino Real to Alejandra Avenue before the football game was determined to be 10:45 to 11:45 AM.

Resultant weekday AM and PM commute peak hour volumes at analysis intersections are presented in **Figures 10.3** and **10.4**, respectively, while Saturday hourly volumes from 11:00 AM to noon in January 2013 and from 10:45 to 11:45 AM during a November 2012 college football game day are presented in **Figures 10.5** and **10.6**, respectively. Counts conducted at other hours on Saturday, January 12, 2013 (from noon to 5:00 PM) are presented in Appendix E, Figures A-1 to A-5.

Existing Intersection Operation

Study Locations

The following intersections have been evaluated in this study. Existing intersection geometrics and control are presented in **Figure 10.2**.

Weekday Commute Peak Hour Conditions

- Valparaiso Avenue/El Camino Real
- Valparaiso Avenue/Emilie Avenue
- El Camino Real/Alejandra Avenue
- Alejandra Avenue/Emilie Avenue

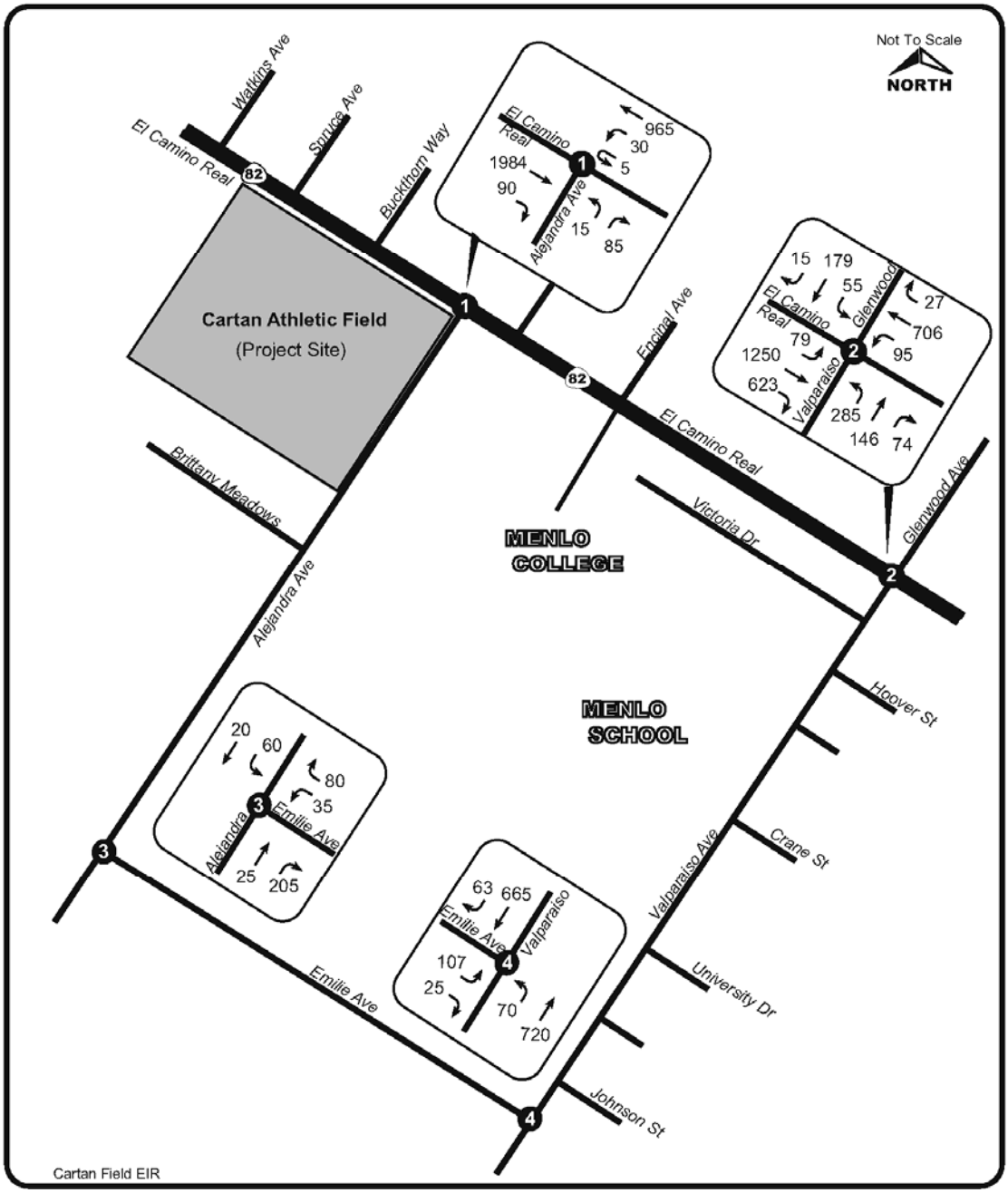


Figure 10.3: Existing AM Commute Peak Hour Volumes
Source: Crane Transportation

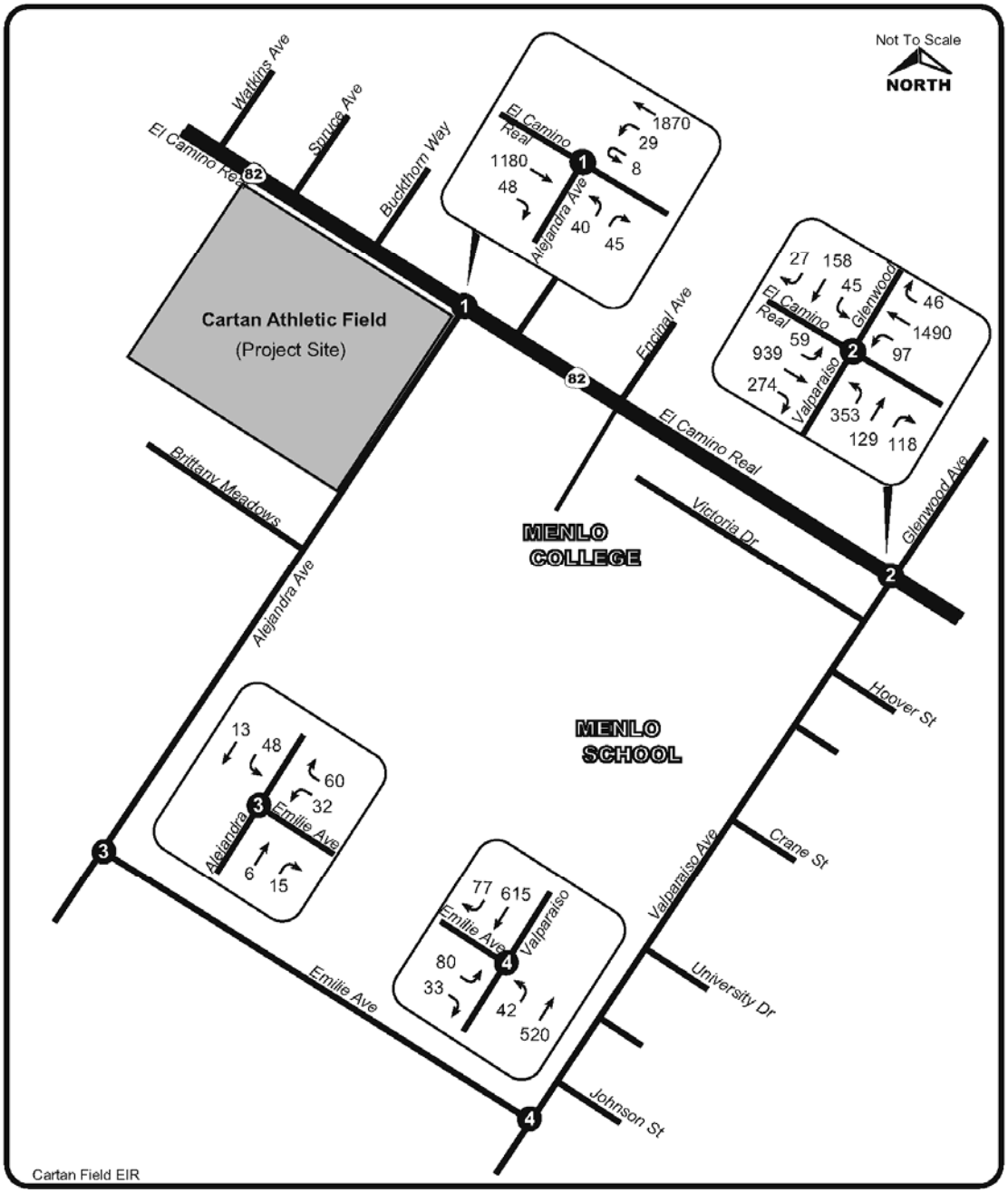


Figure 10.4: Existing PM Commute Peak Hour Volumes
Source: Crane Transportation

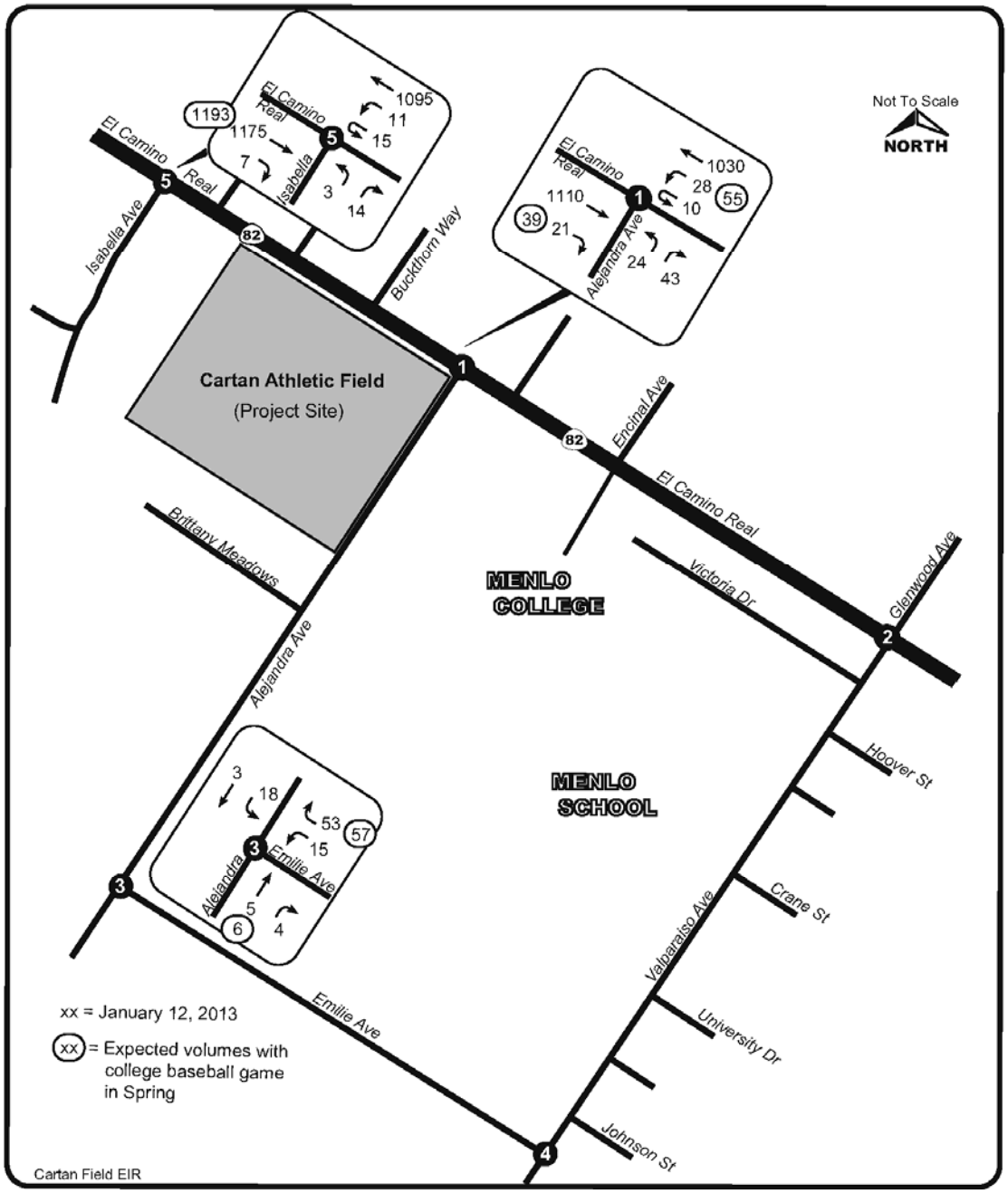


Figure 10.5: Existing Saturday 11:00 AM – 12:00 Noon Volumes
Source: Crane Transportation

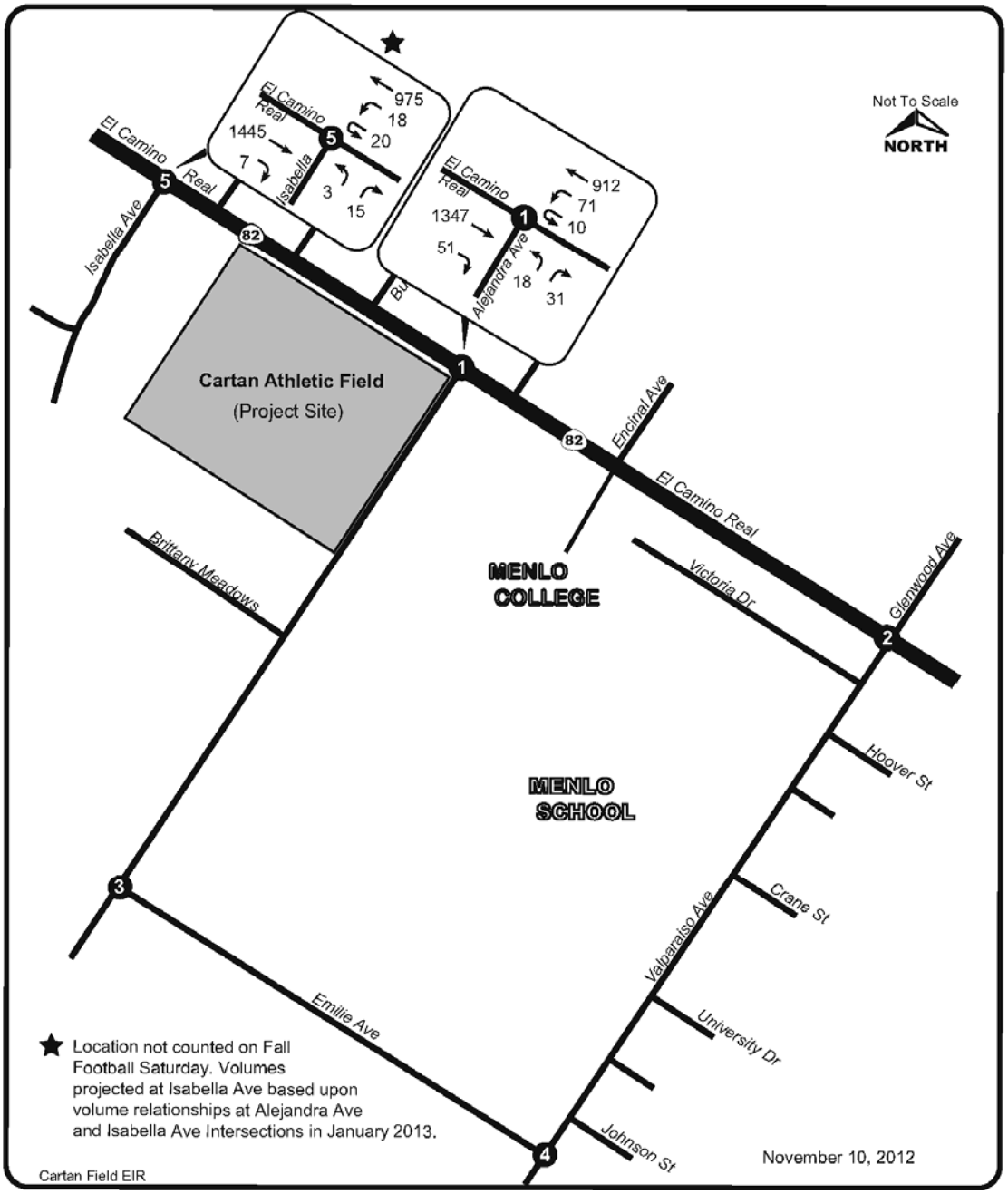


Figure 10.6: Existing Fall Saturday 10:45-11:45 AM Peak Hour Volumes with Football Game Starting at Noon.

Source: Crane Transportation

Spring Saturday Baseball Games

- El Camino Real/Alejandra Avenue
- Alejandra Avenue/Emilie Avenue

Fall Saturday College Football Game

- El Camino Real/Alejandra Avenue
- El Camino Real/Isabella Avenue

Note that the Alejandra/Emilie intersection is internal to the local neighborhood. This intersection was chosen in coordination was the Town as a test location for potential impacts on the local neighborhood streets. Additionally, the Valparaiso/Emilie intersection provides access to the local neighborhood street system west of the Project. Determination of significance of impacts at these intersections would correlate to Project impacts, or the lack thereof, on neighborhood streets.

Intersection Level of Service

Weekday AM Commute Peak Hour Operation

Table 10.3 shows that all intersections are currently operating acceptably during the weekday AM commute peak hour with the exceptions of Valparaiso Avenue/Emilie Avenue (Emilie Avenue stop sign controlled approach at LOS F) and El Camino Real/Alejandra Avenue (Alejandra Avenue stop sign controlled approach left turn at LOS F).

Table 10.3: Intersection Level of Service
Existing Weekday AM Peak Hour

Location	W/O Project
El Camino Real (SR 86)/Valparaiso Ave.-Glenwood Ave. (Signal)	D-48.0[(1)]
El Camino Real/Alejandra Ave. (Alejandra Stop Sign Controlled)	F-73.5 C-18.0/ C-21.3[(2)]
Valparaiso Ave./Emilie Ave. (Emilie Stop Sign Controlled)	F-310[(3)]
Alejandra Ave./Emilie Ave. (Emilie Stop Sign Controlled)	B-11.1[(3)]

(1) Signalized level of service – vehicle control delay in seconds.
(2) Unsignalized level of service – vehicle control delay in seconds. Alejandra Ave. stop sign controlled approach left turn/right turn/left turn from El Camino Real.
(3) Unsignalized level of service – vehicle control delay in seconds. Emilie Ave. stop sign controlled approach.

Year 2000 Highway Capacity Manual Analysis Methodology – TRAFFIX software.
Source: Crane Transportation Group

Note that the current AM peak hour conditions are included here for informational purposes. The Cartan Field Project would not be expected to add any new traffic to weekday AM commute peak hour conditions, so would not have the possibility of resulting in impacts during the AM peak hour.

Weekday PM Commute Peak Hour Operation

Table 10.4 shows that all intersections are currently operating acceptably during the weekday PM commute peak hour with the exception of Valparaiso Avenue/Emilie Avenue (Emilie Avenue stop sign controlled approach at LOS F) and El Camino Real/Alejandra Avenue (Alejandra Avenue stop sign controlled approach left turn at LOS F).

Table 10.4: Intersection Level of Service
Weekday PM Peak Hour

	Existing		2016		2035	
Location	**W/O Project**	**With Project**	**W/O Project**	**With Project**	**W/O Project**	**With Project**
El Camino Real (SR 86)/Valparaiso Ave.-Glenwood Ave. (Signal)	D-36.7[(1)]	D-36.6	D-37.9	D-37.9	E-58.2	E-58.1
El Camino Real/Alejandra Ave. (Alejandra Stop Sign Controlled)	E-44.0/ B-12.0/ B-12.0[(2)]	E-44.6/ B-12.0/ B-12.0	F-51.3/ B-12.3/ B-12.4	F-52.1/ B-12.3/ B-12.5	F-70.4/ B-14.4/ C-15.7	F-70.7/ B-14.4/ C-15.8
Valparaiso Ave./Emilie Ave. (Emilie Stop Sign Controlled)	E-47.2[(3)]	E-47.2	F-55.0/ B-14.1/ A-9.4	F-55.0/ B-14.1/ A-9.4	F-200.5/ C-18.5/ B-10.6	F-200.5/ C-18.5/ B-10.6
Alejandra Ave./Emilie Ave. (Emilie Stop Sign Controlled)	A-9.4[(3)]	A-9.4	A-9.5	A-9.5	A-9.8	A-9.8

(1) Signalized level of service – vehicle control delay in seconds.
(2) Unsignalized level of service – vehicle control delay in seconds. Alejandra Ave. stop sign controlled approach left turn/right turn/left turn from El Camino Real.
(3) Unsignalized level of service – vehicle control delay in seconds. Emilie Ave. stop sign controlled approach left turn/right turn/left turn from Valparaiso Avenue.

Year 2000 Highway Capacity Manual Analysis Methodology – TRAFFIX software.
Source: Crane Transportation Group

Saturday Peak Hour Operation

Table 10.5 shows that both the El Camino Real/Alejandra Avenue and Alejandra Avenue/Emilie Avenue intersections would be operating at acceptable levels of service during the spring Saturday peak traffic hour before the beginning of a baseball game at Cartan Field.

Table 10.6 shows that the El Camino Real/Alejandra Avenue intersection is experiencing unacceptable operation during the peak traffic hour before a fall college football game (Alejandra Avenue stop sign controlled approach left turn at LOS E).

Table 10.5: Intersection Level of Service Spring Saturday (11:00 AM-Noon) With College & High School Baseball Games Beginning 1 Hour Apart (Hour With Highest Project Traffic Increase Along Alejandra Avenue)

(Cartan Field Parking Lot Access to El Camino Real Closed)

	Existing	
Location	**W/O Project**	**With Project**
El Camino Real/Alejandra Ave. (Alejandra Stop Sign Controlled)	D-28.5/ B-11.6/ B-11.5[1]	D-28.8/ B-11.6/ B-11.6
Alejandra Ave./Emilie Ave. (Emilie Stop Sign Controlled)	A-8.7[2]	A-8.7

(1) Unsignalized level of service – vehicle control delay in seconds. Alejandra Ave. stop sign controlled approach left turn/right turn/left turn from El Camino Real.
(2) Unsignalized level of service – vehicle control delay in seconds. Emilie Ave. stop sign controlled approach.

Year 2000 Highway Capacity Manual Analysis Methodology – TRAFFIX software.
Source: Crane Transportation Group

Table 10.6: Intersection Level of Service Fall Saturday (10:45-11:45 AM) With College Football Game Beginning at Noon (Pregame Hour With Highest Turns from El Camino Real to Alejandra Avenue)

(Cartan Field Parking Lot Access to El Camino Real Open)

	Existing	
Location	**W/O Project**	**With Project**
El Camino Real/Alejandra Ave. (Alejandra Stop Sign Controlled)	E-38.0/ B-12.6/ B-14.5[1]	E-38.1/ B-12.4/ B-14.5
El Camino Real/Isabella Ave. (Isabella Ave. Stop Sign Controlled)	C-16.2/ B-14.1[2]	C-16.5/ C-15.1

(1) Unsignalized level of service – vehicle control delay in seconds. Alejandra Ave. stop sign controlled approach left turn/right turn/left turn from El Camino Real.
(2) Unsignalized level of service – vehicle control delay in seconds. Isabella Ave. stop sign controlled approach/left turn from El Camino Real.

Year 2000 Highway Capacity Manual Analysis Methodology – TRAFFIX software.
Source: Crane Transportation Group

Intersection Signalization Needs

Warrant Criteria Evaluation

The Valparaiso Avenue/Emilie Avenue unsignalized analysis intersection currently has weekday AM peak hour volumes exceeding peak hour signal warrant criteria levels and weekday PM peak hour volumes approaching peak hour signal warrant criteria levels, while the El Camino Real/Alejandra Avenue intersection has both AM and PM peak hour volumes lower than peak hour signal warrant criteria levels.

Transit Services

There is public transit service along El Camino Real adjacent to Cartan Field: SamTrans Routes 390, 296 and ECR (on weekends). There was no observed use of local transit by people using Cartan Field facilities during the surveyed weekday AM or PM commute periods or during the Saturday afternoon survey period.

Pedestrian and Bicycle Facilities

Currently, there are no sidewalks or all weather pathways along the Cartan Field El Camino Real or Alejandra Avenue frontages. However, there is a sidewalk running along the east side of El Camino Real in the Project area as well as a sidewalk on the opposite (south) side of Alejandra Avenue extending westerly for about 680 feet from opposite the Cartan Field parking lot entrance to Wunderlich Athletic Field. A crosswalk is provided across Alejandra Avenue from the end of this walkway to Cartan Field. At Wunderlich Field, a sidewalk is provided along the west side of a driveway extending into the college campus.

There are no bicycle lanes along El Camino Real or Alejandra Avenue adjacent to or in the vicinity of Cartan Field. Class II bike lanes are, however, provided on Valparaiso Avenue.

Existing weekday AM and PM commute peak period pedestrian and bicycle volumes are presented in **Figures 10.7** and **10.8**, respectively, while Saturday January 2013 and fall 2012 football game pedestrian and bicycle volumes are presented in **Figures 10.9** and **10.10**, respectively.

PROJECT TRIP GENERATION

The proposed Cartan Field redevelopment plan would provide a new 168-space parking lot extending along the field's El Camino Real frontage. The existing 65-space parking lot along Alejandra Avenue would be eliminated, but its access to Alejandra Avenue would be maintained and a driveway would connect this entrance to the new parking lot. Access to the new parking lot would also be provided from southbound El Camino Real (right turn in and out only at the north end of the field), which would only be open for major events, such as the five Menlo College home football games each fall on Saturdays. There would be no lights for the sports fields and no nighttime activities.

The new parking lot would be reserved for spectators and coaches. Some sports activities at Menlo College and Menlo School now use the 65-space Cartan Field lot for spectator parking, while others have spectators and coaches parking in a variety of other parking lots within the college campus to the south of Alejandra Avenue. Spectators now parking in the 65-space Cartan Field lot would park in the expanded Cartan Field lot, while for some sports, spectators and coaches now parking within the college campus would transfer their parking to the additional 103 spaces in the new Cartan Field lot.

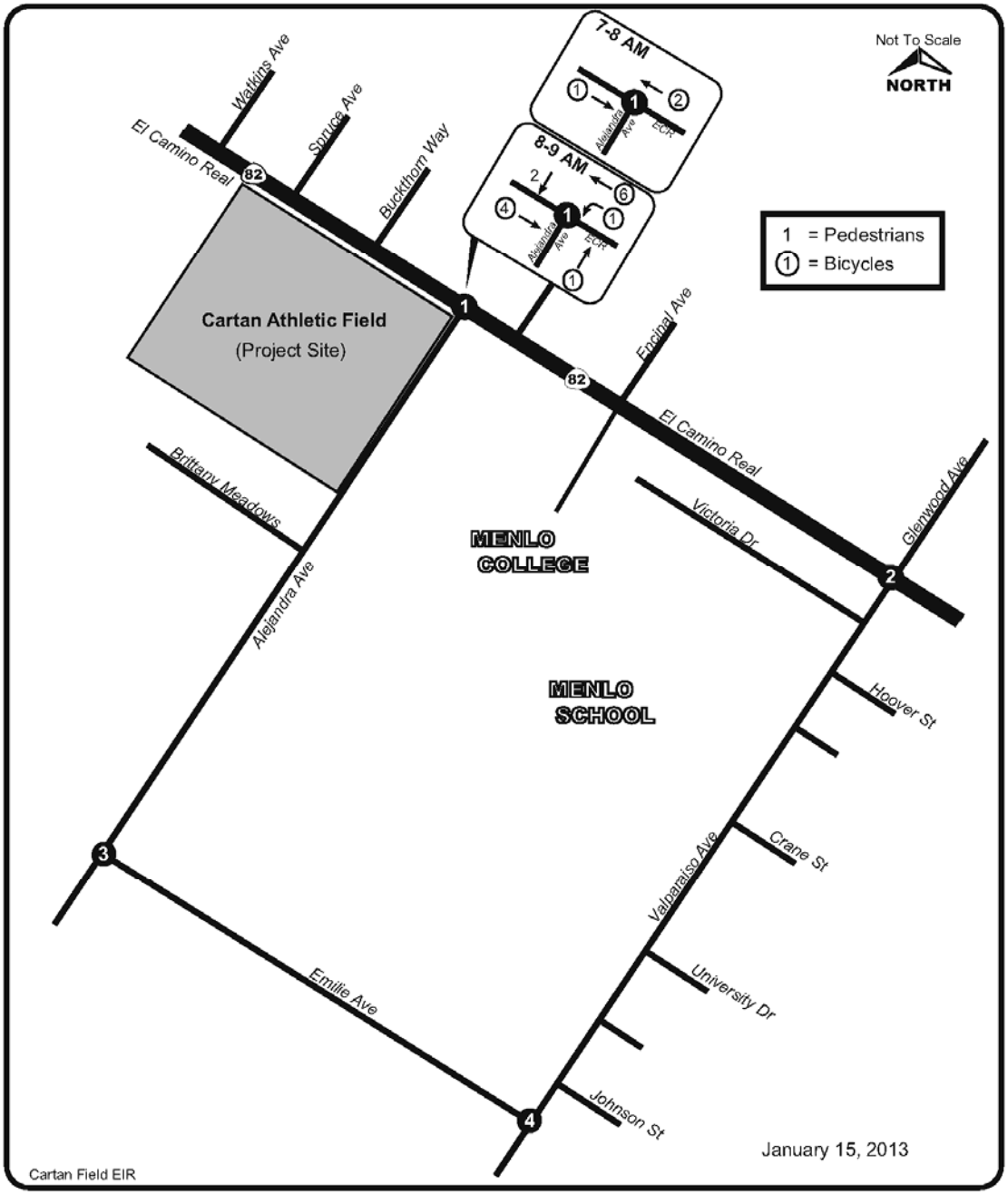


Figure 10.7: Existing Weekday Am Commute Period Pedestrian and Bicycle Volumes
Source: Crane Transportation

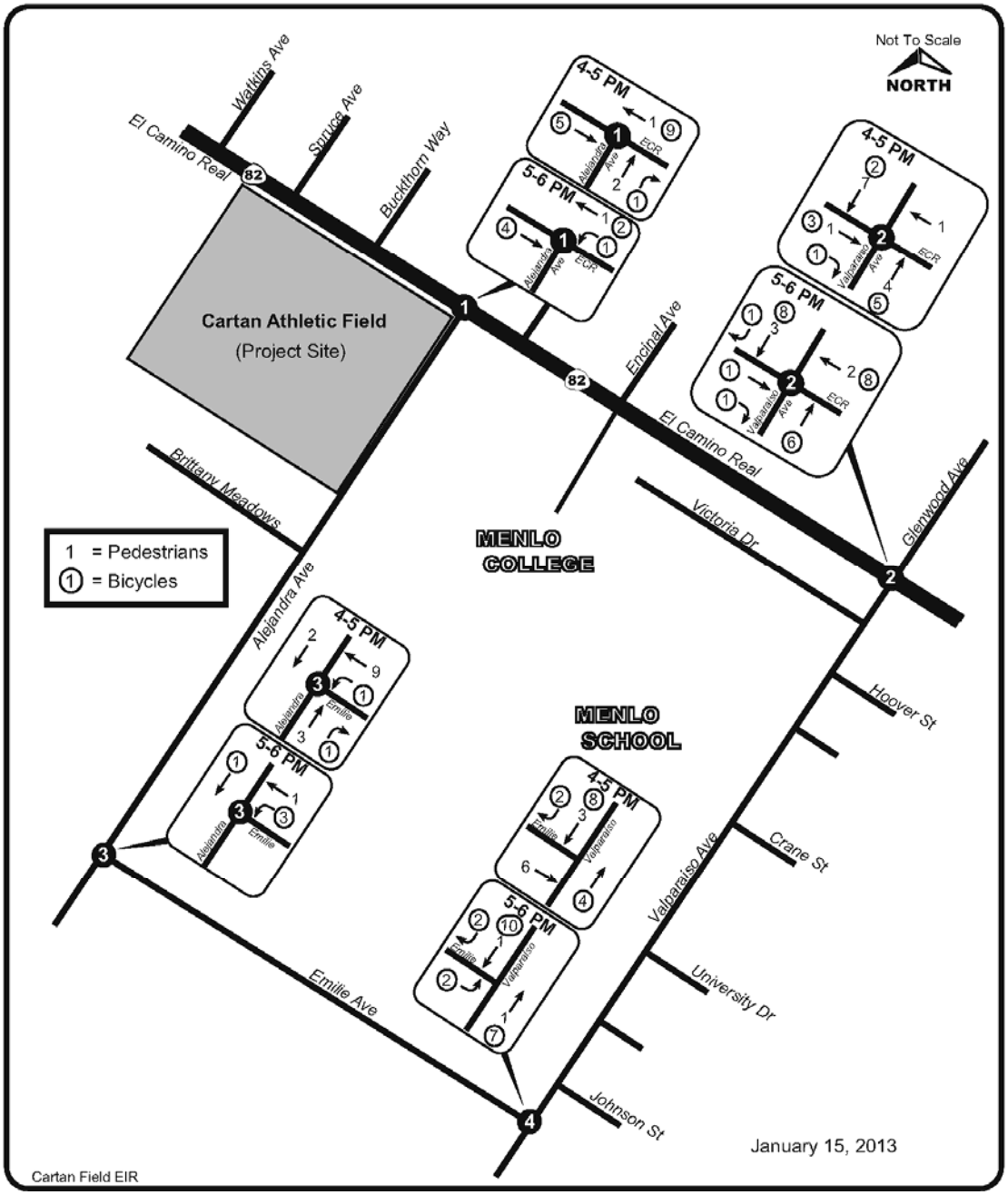


Figure 10.8: Existing Weekday PM Commute Period Pedestrian and Bicycle Volumes
Source: Crane Transportation

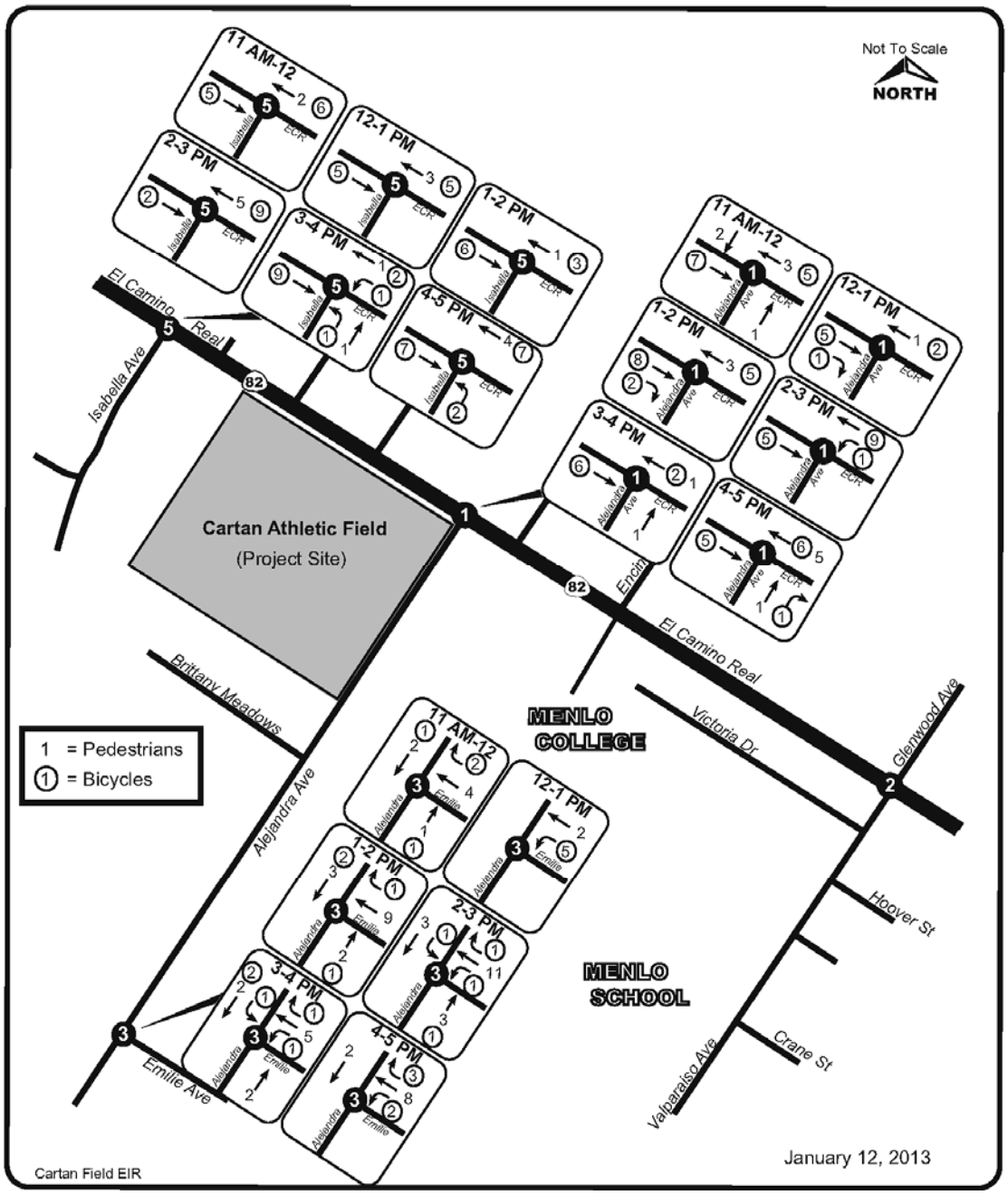


Figure 10.9: Existing Saturday 11:00 AM to 5:00 PM Pedestrian and Bicycle Volumes
Source: Crane Transportation

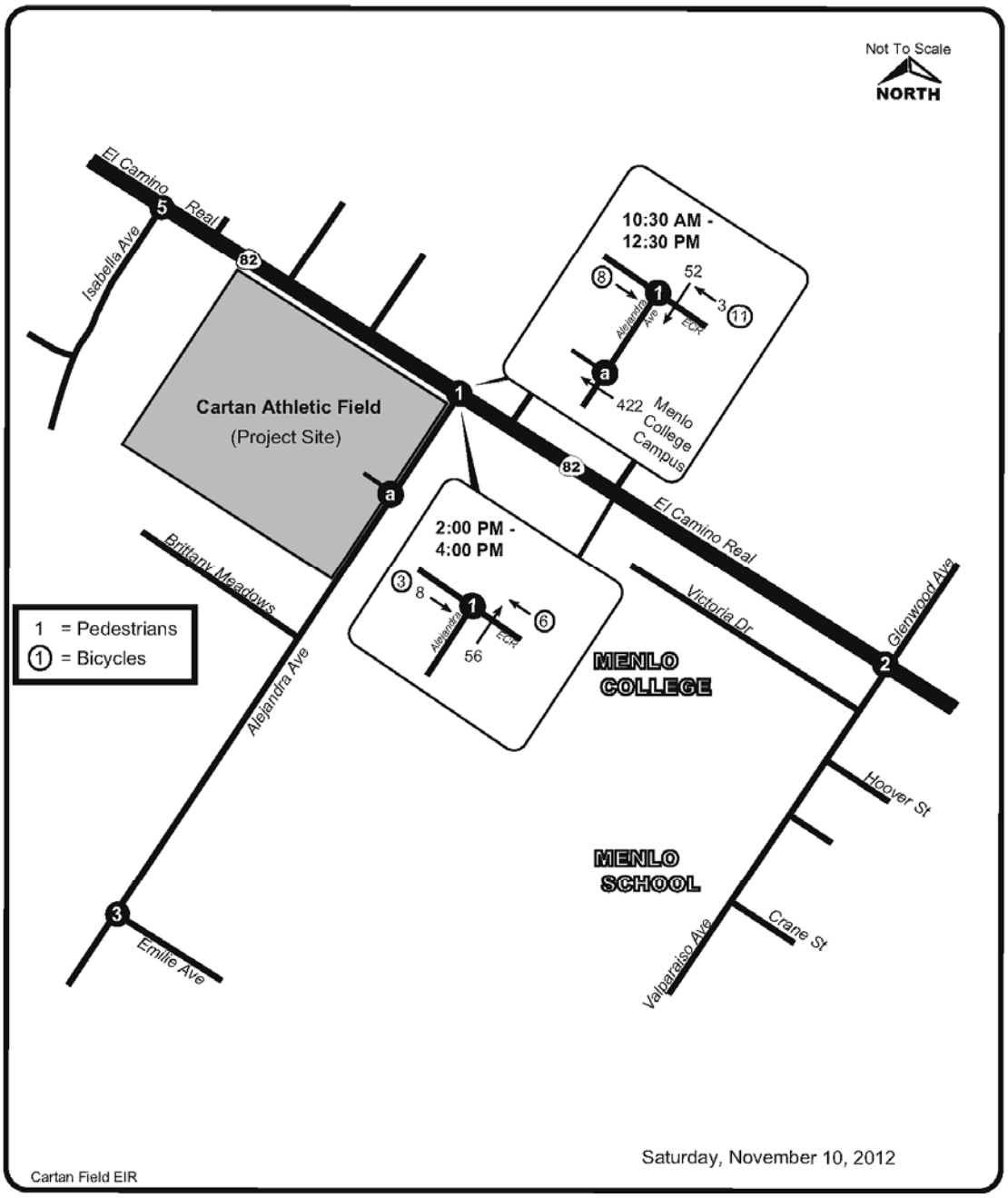


Figure 10.10: Existing Fall Football Pedestrian and Bicycle Volumes
Source: Crane Transportation

Projections have been developed by Menlo College and Menlo School of the increased spectator traffic and parking demand that would be expected at the new Cartan Field parking lot. Sports with few spectators now using Cartan Field parking are projected to have a 10 percent growth in spectators into the future, while the more popular sports, such as baseball and football, are projected to have both a 10 percent growth in spectators as well as a reassignment of existing parking demand from various campus parking lots as well as event parking on the east side of El Camino Real to the new Cartan Field. The largest reassignments are projected for college baseball games in the spring (up to 50 existing spectator vehicles moving to the Cartan Field lot) and for the five college football games on fall Saturdays (up to 100 existing spectator vehicles moving to the larger Cartan Field lot).

Table 10.7 presents those Menlo School sporting activities expected to result in additional traffic accessing the new Cartan Field parking lot, while **Table 10.8** presents those Menlo College sporting activities expected to result in additional traffic accessing the new Cartan Field parking lot.

PROJECT TRIP DISTRIBUTION

Distribution patterns of traffic accessing the new Cartan Field parking lot were developed based upon traffic counts conducted for a fall Menlo College football game in November 2012. Pre- and post-game turn movement counts were conducted at the El Camino Real/Alejandra Avenue intersection as well as at the Alejandra Avenue intersections with the Cartan Field parking lot and the college campus parking lot opposite Cartan Field. This campus lot was also being used for spectator parking. Based upon these counts, the following spectator traffic distribution patterns were developed.

Menlo College Football Game
Spectator Traffic Distribution Pattern

El Camino Real north of Alejandra Avenue	35%
El Camino Real south of Alejandra Avenue	55%
Alejandra Avenue west of Cartan Field	10%
	100%

These same patterns were utilized for distribution of net new traffic accessing the new 168-space Cartan Field parking lot.

The weekday PM commute peak hour Project traffic increment is presented in **Figure 10.11**, while existing with Project, year 2016 with Project and year 2035 with Project weekday PM peak hour volumes are presented in **Figures 10.12, 10.13** and **10.14**, respectively, as detailed below. The spring Saturday Project traffic increment and the fall Saturday Project traffic increment are presented in **Figure 10.15**, while resultant spring Saturday existing with Project and fall Saturday existing with Project pre-game peak hour volumes are presented in **Figures 10.16** and **10.17**, respectively.

YEAR 2016 (NEAR TERM HORIZON) CIRCULATION SYSTEM OPERATION

The year 2016 has been selected by the Town of Atherton for near term horizon evaluation, as the proposed Project is projected to be completed and in full operation no sooner than this year. Only weekday PM commute peak hour conditions have been evaluated for this horizon, as the Project would not be expected to add any new traffic to weekday AM commute peak hour conditions.

Table 10.7: Menlo School
Changes in Parking Demand & Traffic Activity at Cartan Field

Activity	Change in Parking Location	Change in # of Vehicles To/From Campus using Cartan Field Lot	# Vehicles Changing Parking Location on Campus to Cartan Field Lot	# Week-days	# Satur-days	Weekday Times		Saturday Times	
						In	Out	In	Out
HS Football Games-Fall (Spectator Parking)	No – Existing & Future at Cartan	+ 7	0	10	0	2:30-3PM	6-6:30PM	—	—
MS Baseball Games-Spring (Spectator Parking)	No – Existing at Cartan	+2	0	4	0	4:30-5PM	7-7:30PM	—	—
HS Baseball Games-Spring (Spectator/Coaches Parking)	No – Existing & Future at Cartan	+3	0	24	6	2:30-3PM	6-6:30PM	10:30-11AM	2-2:30 PM
HS Summer Baseball Practice (Coaches Parking)	No – Not an Existing Activity	+10	0	18	0	3:30-4PM	7-7:30PM	—	—
HS Summer Baseball Games (Spectator/Coaches Parking)	No – Not an Existing Activity	+20	0	0	6	—	—	10:30-11AM	2-2:30 PM
HS F/S Soccer Games-Winter (Spectator/Coaches Parking)	No – Existing & Future at Cartan	+2	0	11	5	3:30-4PM	6-6:30PM	12:30-1PM	3-3:30 PM
HS Varsity Soccer Games-Winter (Spectator/Coaches Parking)	No – Existing & Future at Cartan	+2	0	11	5	2:30-3PM	5-5:30PM	10:30-11:00AM	1-1:30 PM
HS F/S Lacrosse Games-Spring (Spectator/Coaches Parking)	No – Existing & Future at Cartan	+2	0	14	6	4:30-5PM	7-7:30PM	1:30-2PM	4-4:30 PM
HS Varsity Lacrosse Games-Spring (Spectator/ Coaches Parking)	No – Existing & Future at Cartan	+3	0	14	6	2:30-3PM	5:30-6PM	11:30AM-Noon	2:30-3 PM
HS Swim Meets-Spring (Spectator Parking)	No – Existing & Future at Cartan	+ 8	0	4	1	2:30-3PM	6-6:30PM	8:30-9AM	2-2:30 PM
HS Swim Practice-Spring (Coaches Parking)	Yes – Main Lot to Cartan	0	+ 3	70	4	2:30-3PM	6-6:30PM	8:30-9AM	11-11:30 AM
HS F/S Water Polo Games-Fall (Spectator/Coaches Parking)	No – Existing & Future at Cartan	+2	0	12	0	4:30-5PM	7-7:30PM	—	—
HS Girls Water Polo Practice-Fall (Coaches Parking)	Yes – Main Lot to Cartan	0	+ 2	70	5	2:30-3PM	5-5:30PM	10:30-11AM	1-1:30 PM
HS Boys Water Polo Practice-Fall (Coaches Parking)	Yes – Main Lot to Cartan	0	+ 4	70	5	4:30-5PM	6:30-7PM	8:30-9AM	11-11:30 AM
HS Varsity Water Polo-Fall (Spectator/Coaches Parking)	No – Existing & Future at Cartan	+2	0	8	4	2:30-3PM	5-5:30 PM	11AM(2) 9AM(2)	1PM(2) 5PM(2)
HS Track Meets-Spring Eliminated (Spectator Parking)	No – Existing at Cartan	(- 75)	0	3	0	2;30-3PM	6-6:30PM	—	—
HS Tennis Matches-Spring/Fall (Spectator/ Coaches Parking)	No – Existing & Future at Cartan	+1	0	32	0	2:30-3PM	6-6:30PM	—	—
Saturday Tennis Clinics (Participant drop off/ pickup)	No – Existing & Future at Cartan	+4 drop off + 4 pick up	0	0	40	—	—	9-10AM	4-5PM

Table 10.8: Menlo College
Changes in Parking Demand & Traffic Activity at Cartan Field

Activity	Change in Parking Location	Change in # of Vehicles To/From Campus	# Vehicles Changing Parking Location on Campus	# Weekdays	# Saturdays	Weekday Times		Saturday Times	
						In	Out	In	Out
Baseball Games-Spring (Spectators)	Yes + New Cars to Cartan Field	+ 9	+50	11-13	9-11	3:30-4PM	6:30-7PM	11:00 AM-Noon	3:00-4PM
Football Games-Fall (Spectators)	Yes + New Cars to Cartan Field	+ 15	+100	0	5	games on weekends	games on weekends	10AM-Noon	4-5PM
Men's Soccer Games-Fall (Spectators)	Yes + New Cars to Cartan Field	+ 6	+30	2	5-7	3:30-4PM	6-6:30PM	2-3PM	5-6 PM*
Women's Soccer Games-Fall (Spectators)	Yes + New Cars to Cartan Field	+ 6	+30	2	5-7	3:30-4PM	6-6:30PM	Noon-1PM	3-4 PM*

* Women's and men's soccer games are typically on the same Saturdays (women start at 1 PM and men at 3 PM).

Overall, the highest increases in traffic to the Cartan Field parking lot due to the proposed Project would be as follows.

LARGEST EXPECTED INCREASES IN TRAFFIC ACCESSING CARTAN FIELD PARKING LOT DUE TO THE PROJECT

Weekday PM Peak Hour (4:30-5:30)
(High School girls water polo ends and High School boys water polo begins)

IN	OUT
+4*	+2*

Saturday Morning – Spring (11:00 AM-Noon)
(High School baseball game beginning at 11:00 AM (late arrivals) and College baseball game beginning at noon)

IN	OUT
+56*	0

Saturday Morning – Fall (10:45-11:45 AM)
(College football game beginning at Noon)

IN	OUT
+110**	+0

* Access via Alejandra Avenue only.
** Access via both Alejandra Avenue and El Camino Real.

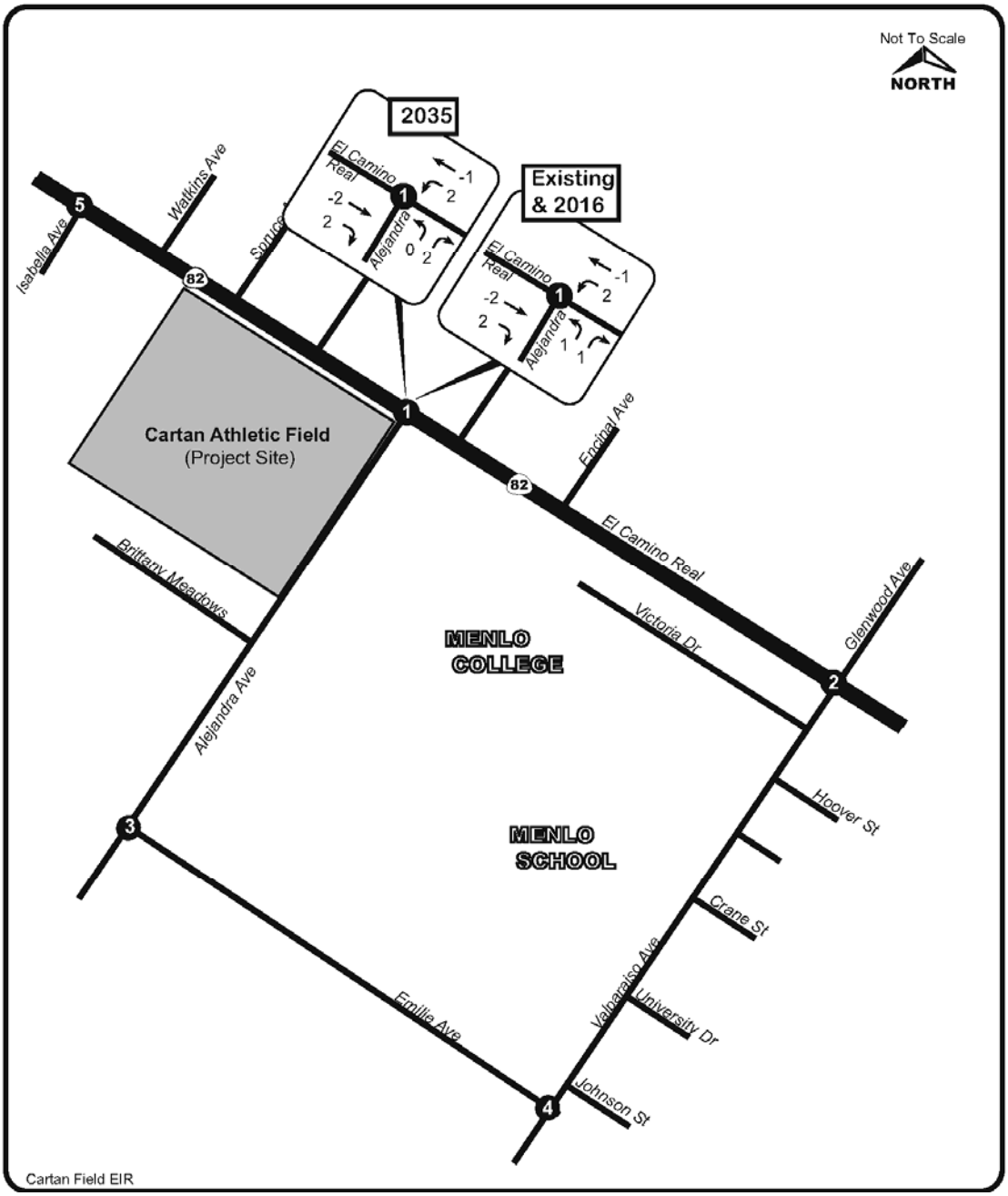


Figure 10.11: Project Increment Traffic Weekday PM Peak Hour Existing, 2016 and 2035 PM Peak Hour

Source: Crane Transportation

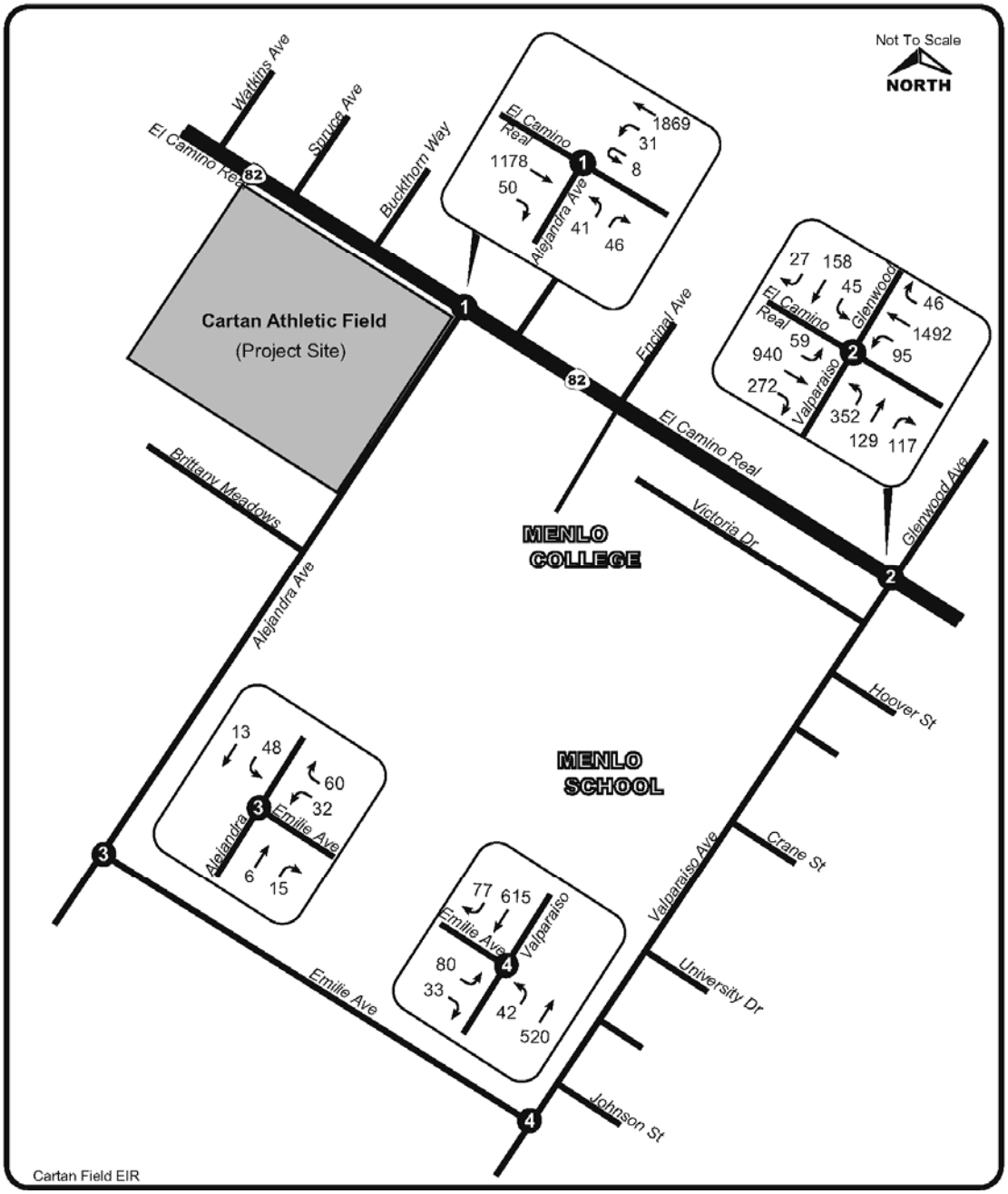


Figure 10.12: Existing with Project Weekday PM Peak Hour Volumes
Source: Crane Transportation

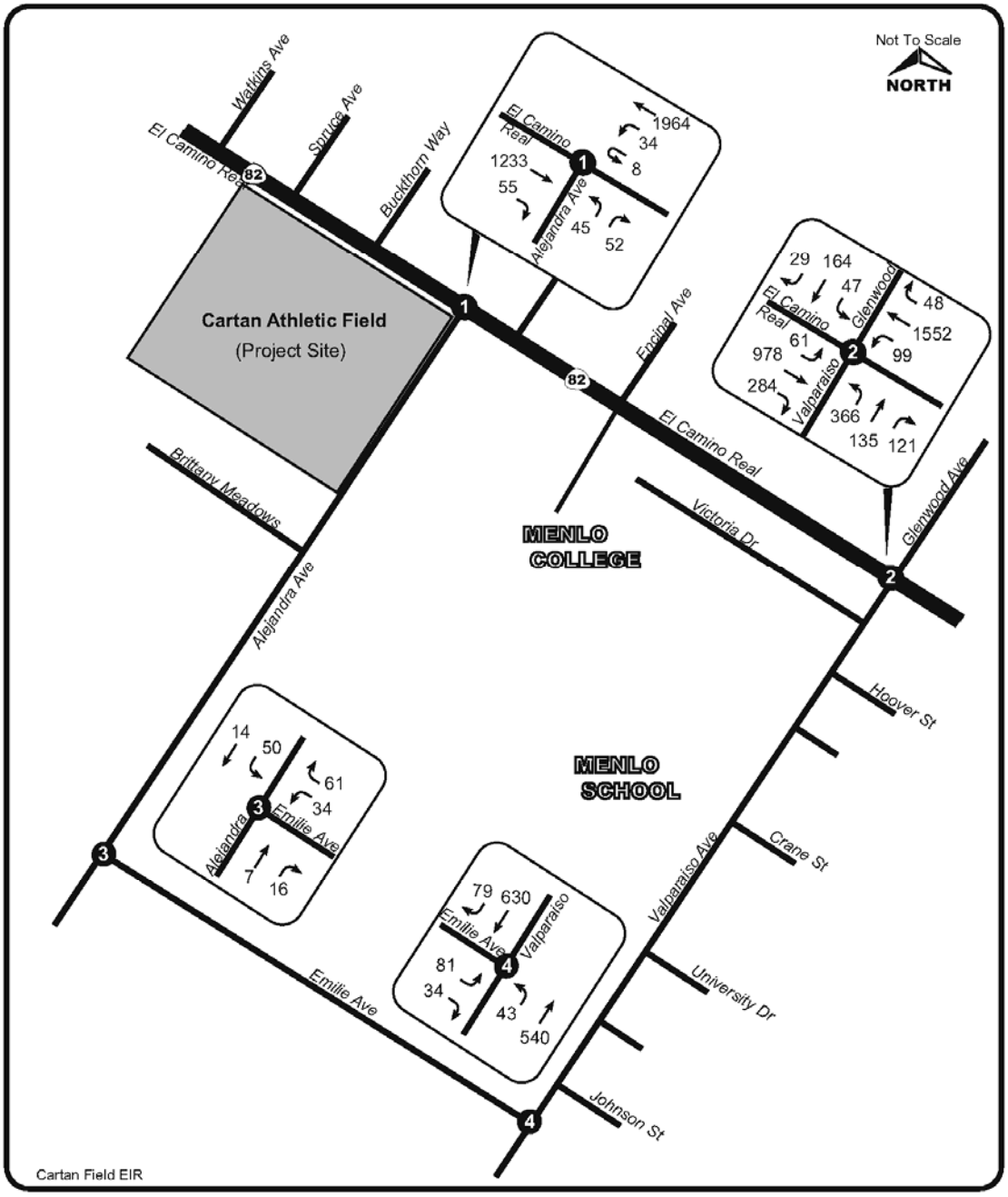


Figure 10.13: Year 2016 with Project Weekday PM Peak Hour Volumes
Source: Crane Transportation

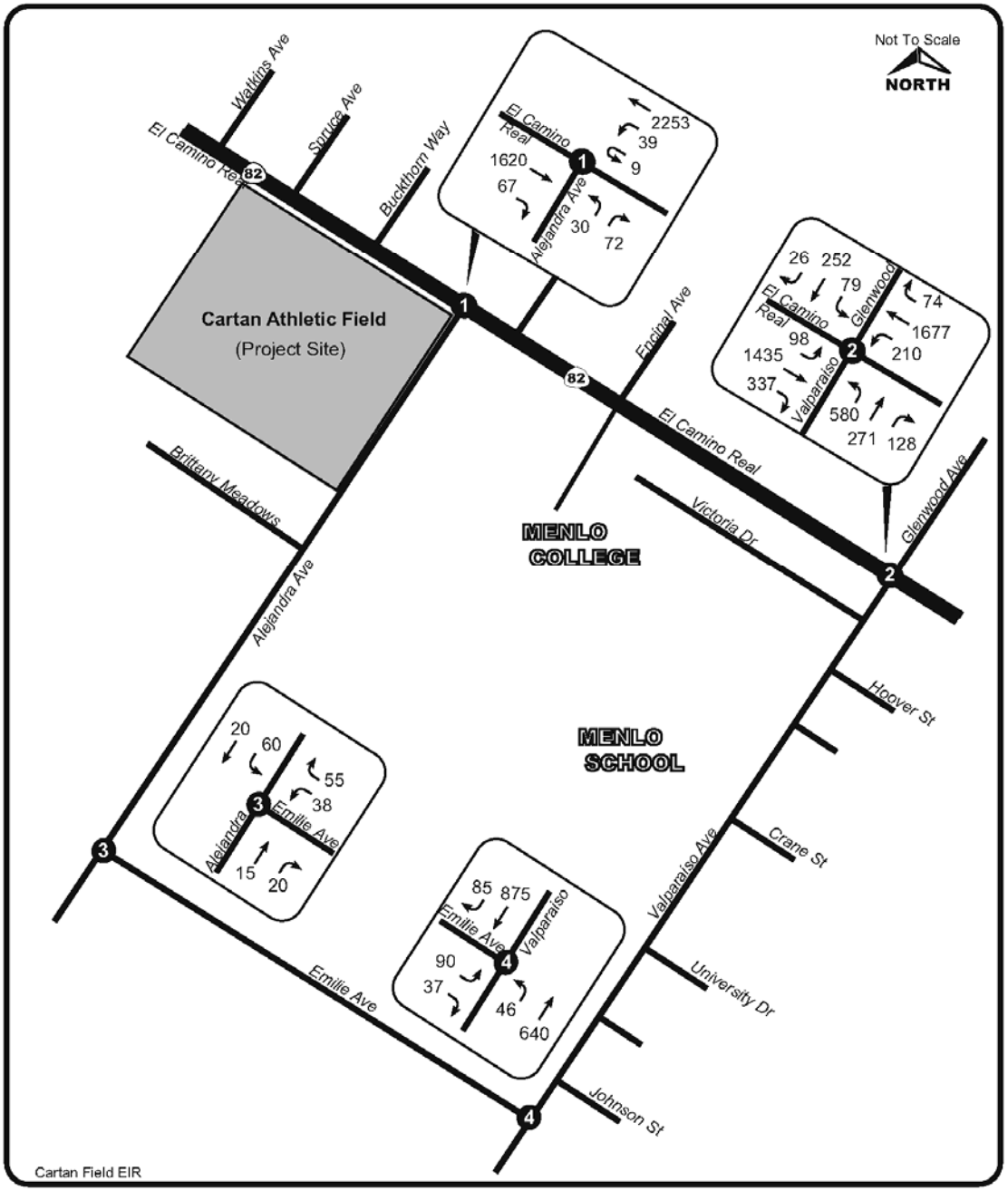


Figure 10.14: Year 2035 with Project Weekday PM Peak Hour Volumes
Source: Crane Transportation

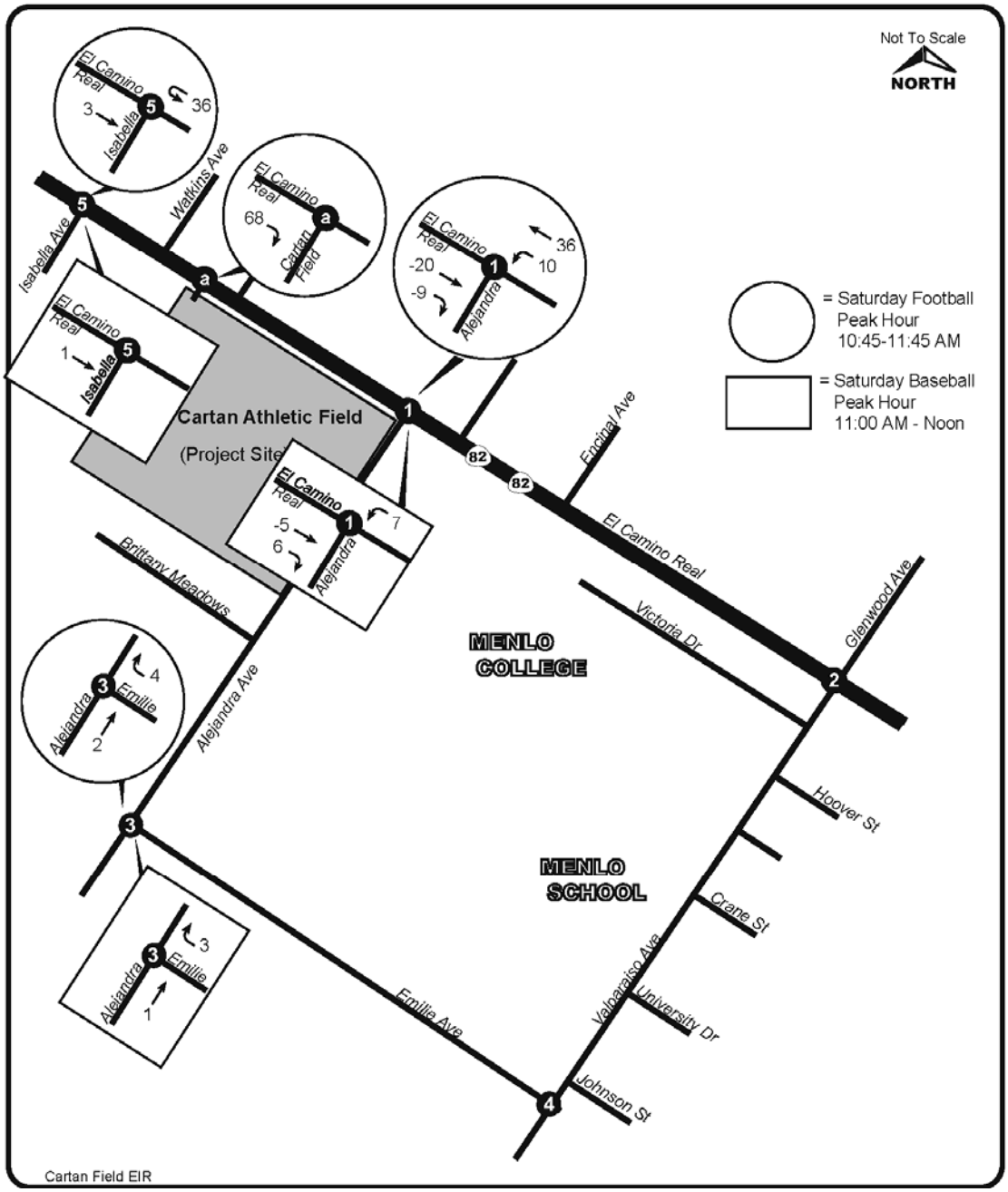


Figure 10.15: Project Traffic Increment Saturday Spring Baseball and Fall Football Existing Pre Game Peak Traffic Hours

Source: Crane Transportation

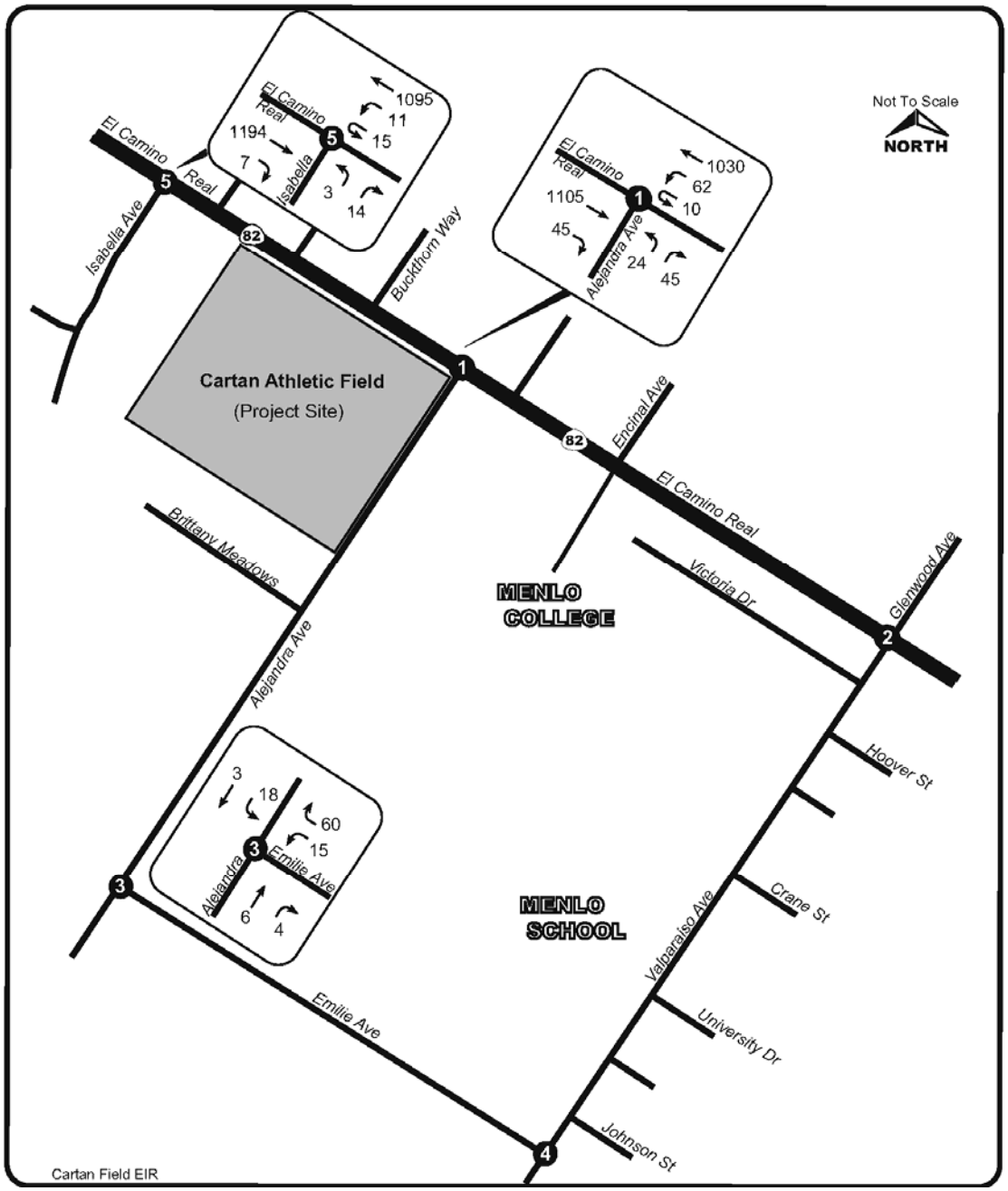


Figure 10.16: Existing Spring Baseball with Project Saturday Peak Hour Volumes (11:00-Noon)
Source: Crane Transportation

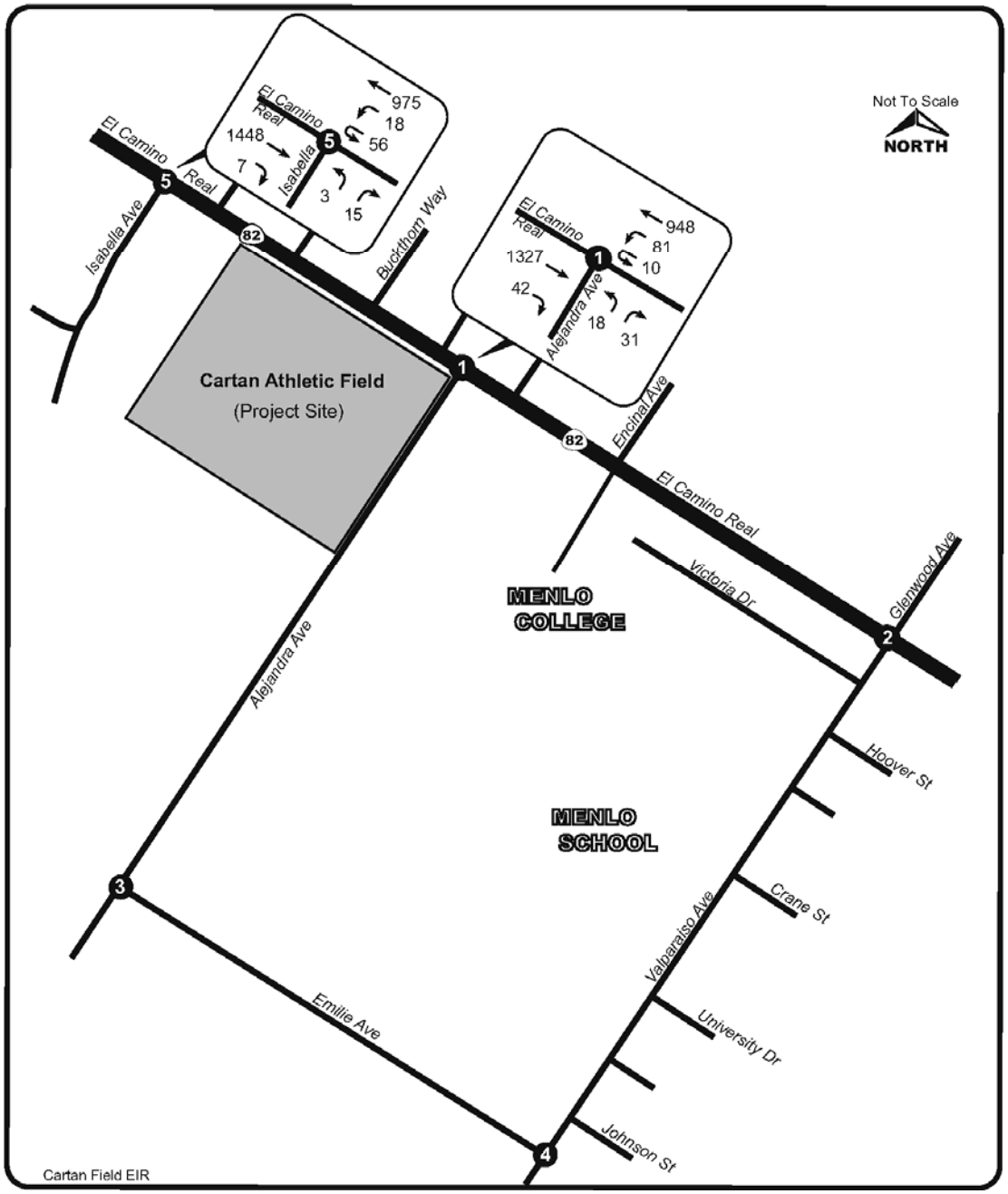


Figure 10.17: Existing with Project Fall Football Saturday Peak Hour Volumes (10:45-11:45 AM)

Source: Crane Transportation

Year 2016 (near term horizon) peak hour without Project traffic volumes reflect existing conditions with the addition of estimated net new trips from approved and planned developments in the communities of Menlo Park and Redwood City.

Approved/Pending Developments Within Project Site Vicinity

There are currently no approved developments within the Town of Atherton other than the Town Center project. The Town Center project would redevelop the area where the Town's administrative and civic functions are currently concentrated, and this project is currently in the early planning stages. The Atherton Library Building Project was rejected by the voters in November 2012 and its status is currently unknown. Because this project would result in the reorganization of existing uses, no net new trips would be associated with the Town Center project.

Town of Atherton Planning staff provided a list of all developments in nearby communities expected to be completed and in operation by 2016. This list was compiled from information available on the City of Menlo Park and City of Redwood City websites and was confirmed with staff at these cities. These future near term projects are anticipated to add traffic to the roadway network and, in some cases, would add traffic to the roadways and intersections studied in this analysis. Each approved/pending development project is identified in **Table 10.9**.

Near Term Horizon Traffic Volumes and Lane Configurations

The PM peak hour trips assigned to the roadway network from approved/pending projects were either taken from traffic studies prepared specifically for projects or from traffic studies that had evaluated near term horizon conditions that included summaries of traffic volumes from the list of projects in **Table 10.9**. For some approved/pending developments, their trips were not shown at the Cartan Field study intersections. In this case, approved/pending development traffic volumes were calculated by extending traffic volumes from nearby intersections. Resultant year 2016 weekday PM commute peak hour without Project volumes are presented in **Figure 10.18**.

There is only one programmed and funded roadway improvement that would be built by the year 2016. The Emilie Avenue approach to Valparaiso Avenue will be widened to provide exclusive left and right turn lanes.

Near Term Horizon Intersection Level of Service

Table 10.4 summarizes year 2016 without Project intersection operating conditions during the weekday PM commute peak hour. As shown, the following intersections would be operating with an unacceptable LOS:

- El Camino Real/Alejandra Avenue: The Alejandra Avenue stop sign controlled approach left turn would operate at LOS F.

- Valparaiso Avenue/Emilie Avenue: The Emilie Avenue stop sign controlled approach left turn would operate at LOS F.

Near Term Horizon Intersection Signalization Needs

No unsignalized analysis intersections would have weekday PM without Project peak hour volumes exceeding peak hour signal warrant #3 criteria levels.

Table 10.9: Cumulative Project Development Expected by 2016

Land Use (ITE Land Use Code)	Size	Unit	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
Trip Rates[1]					
Residential Condominium/Townhouse (230)		DU	0.35	0.17	0.52
Hotel (310)		Room	0.31	0.28	0.59
Health/Fitness Club (492)		TSF	2.01	1.52	3.53
Skilled Nursing Facility/Nursing Home (620)		Bed	0.07	0.15	0.22
General Office (710)		TSF	0.25	1.24	1.49
Medical/Dental Office (720)		TSF	0.93	2.53	3.46
Shopping Center (820)		TSF	1.83	1.90	3.73
High Turnover (Sit-Down) Restaurant (932)		TSF	6.58	4.57	11.15
Trip Generation					
Menlo Park Pending Projects					
389 El Camino Real (230)	26	DU	9	4	14
Facebook Campus Project[2]			89	718	807
Menlo Park Approved Projects					
1460 El Camino Real					
Condo (230)	16	DU	6	3	8
Retail (820)	26.8	TSF	49	51	100
Menlo Gateway[3]			380	855	1235
Burgess Gymnastics	0	TSF	0	0	0
1300 El Camino Real (820)	110,065	TSF	201	209	411
1706 El Camino Real[4]			11	30	41
Menlo Park Planning and Zoning					
El Camino Real/Downtown Specific Plan[5]			619	700	1319
Redwood City					
The Preserve at Redwood Shores (230)	156	DU	54	27	81
Edgewood Road Subdivision (230)	5	DU	2	1	3
104 Cedar Street (230)	15	DU	5	3	8
333 Main Street (230)	132	DU	46	23	69
640 Veterans Blvd. (230)	264	DU	92	45	137
2580 El Camino Real (230)	141	DU	49	24	73
201 Marshall Street (230)	116	DU	40	20	60
Lathrop PARC (620)	114	Bed	8	17	25
Sequoia Hospital Addition[6]	160	TSF	60	128	188
Kaiser Hospital[7]			160	194	354
Old Spaghetti Factory (932)	6575	TSF	43	30	73
One Marina					
Residential Condominium/Townhouse (230)	231	DU	80	40	120
Hotel (310)	200	Room	63	55	118
Retail (820)	10	TSF	18	19	37

(1) Trip Rates referenced from Institute of Transportation Engineers, *Trip Generation*, 8th Edition, 2008.
(2) Menlo Park Facebook Campus Project Draft EIR, December 2011.
(3) Menlo Gateway Project Final EIR, March 2010
(4) 1706 El Camino Real Medical Offices Transportation Impact Analysis, February 24, 2009
(5) Menlo Park El Camino Real/Downtown Specific Plan Draft EIR, April 2011
(6) Sequoia Hospital Campus/Precise Plan Draft Environmental Impact Report, March 2007
(7) Kaiser Permanente Redwood City Medical Center Master Plan Draft Environmental Impact Report, March 2003

Project List Source: Town of Atherton Planning Dept.

YEAR 2035 (LONG TERM HORIZON) – CIRCULATION SYSTEM OPERATION

Long Term Horizon Traffic Volumes and Lane Configurations

Year 2035 weekday PM peak hour volumes were developed from traffic modeling projections provided in the Menlo Park El Camino Real/Downtown Specific Plan Draft EIR. Traffic projections were provided for major signalized intersections along El Camino Real and Valparaiso Avenue, while projections for the unsignalized intersections evaluated in the Cartan Field study were not available. However, volume increases at the signalized intersections of Valparaiso Avenue/University Avenue and El Camino Real/Encinal Avenue were extended in a pattern reflective of existing traffic flow between intersections in order to provide representative 2035 without Project traffic projections at the El Camino Real/Alejandra Avenue, Valparaiso Avenue/Emilie Avenue and Alejandra Avenue/Emilie intersections. Resultant year 2035 weekday PM commute peak hour without Project volumes are presented in **Figure 10.19**.

No capacity improvements are programmed and funded for any intersection evaluated in this study other than the improvement at Valparaiso Avenue/Emilie Avenue listed for 2016.

Long Term Horizon Intersection Level of Service

Table 10.4 summarizes year 2035 without Project intersection operating conditions during the weekday PM commute peak hour. As shown, the following intersections would be operating with an unacceptable LOS:

- El Camino Real/Alejandra Avenue: The Alejandra Avenue stop sign controlled approach left turn would operate at LOS F.
- Valparaiso Avenue/Emilie Avenue: The Emilie Avenue stop sign controlled approach left turn would operate at LOS F.
- El Camino Real/Valparaiso Avenue: Signalized operation would be LOS E.

Long Term Horizon Intersection Signalization Needs

The following intersection would have weekday PM commute peak hour without Project volumes approaching peak hour signal warrant #3 criteria levels.

- Valparaiso Avenue/Emilie Avenue

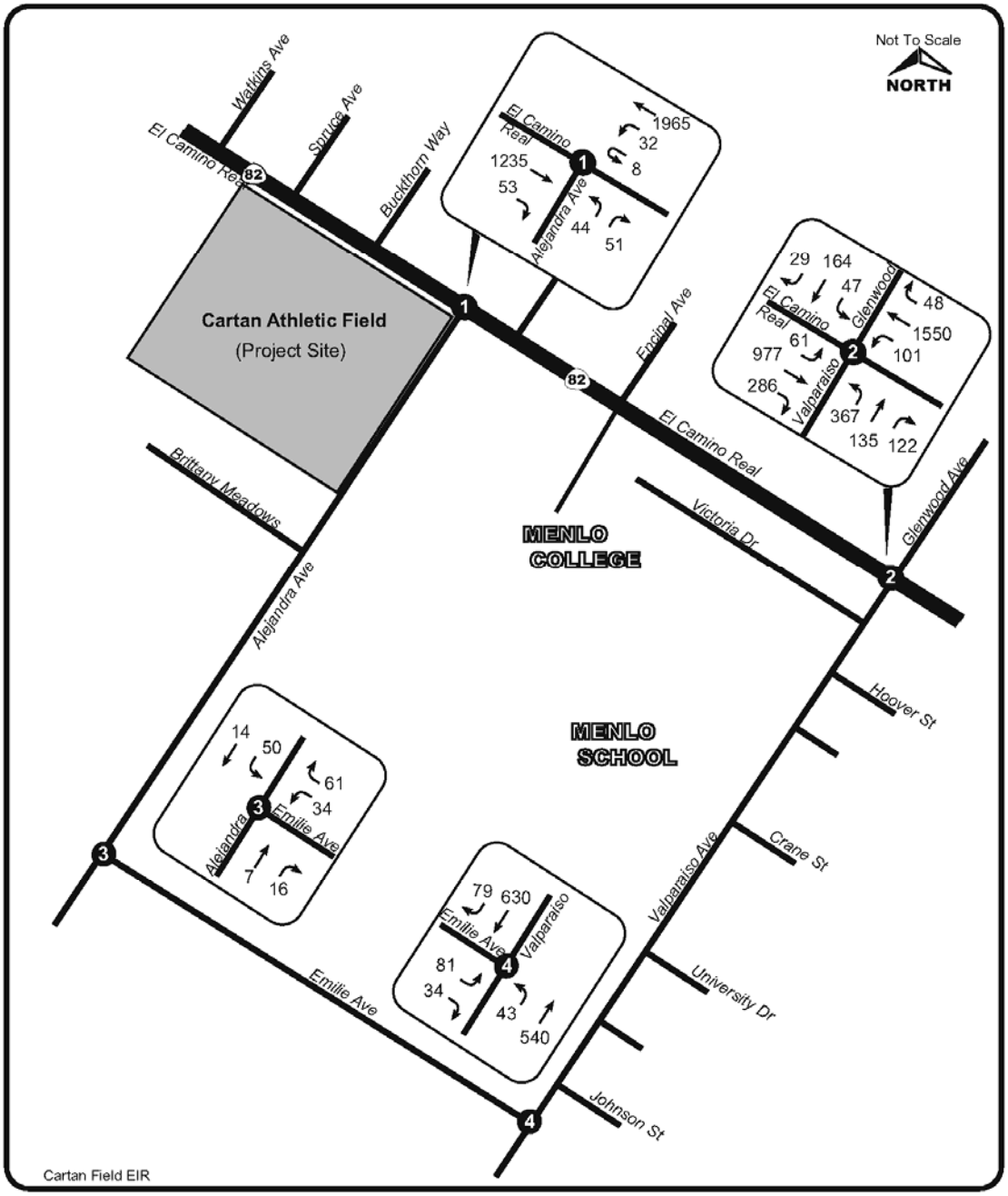


Figure 10.18: Year 2016 Weekday Without Project PM Peak Hour Volumes
Source: Crane Transportation

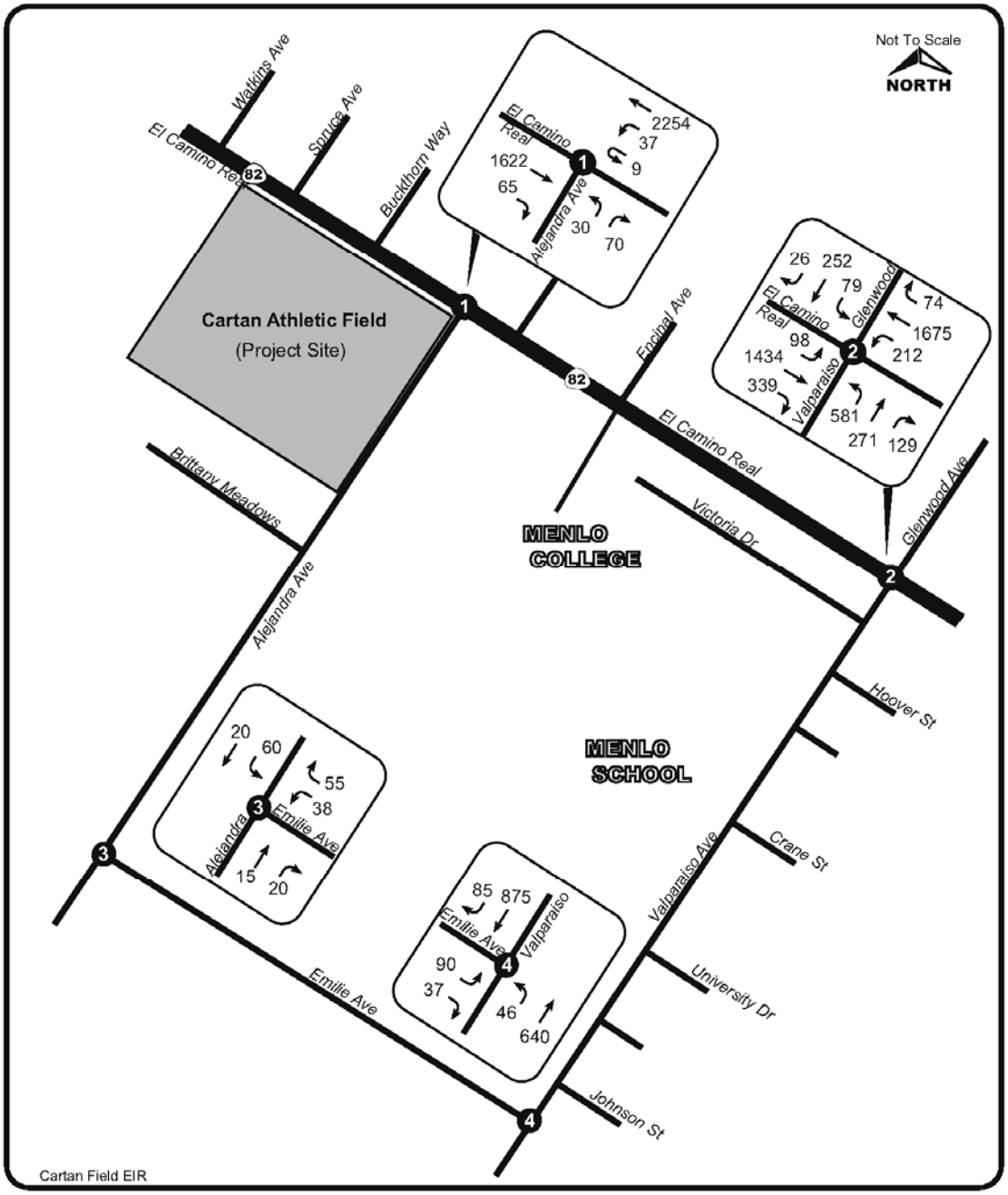


Figure 10.19: Year 2035 Weekday Without Project PM Peak Hour Volumes
Source: Crane Transportation

IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

The CEQA Guidelines provide guidance in evaluating project impacts and determining which impacts will be significant. Per CEQA Guidelines Appendix G, a project's effects on transportation and circulation may be significant when the project would:

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.
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?
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.
4. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
5. Result in inadequate emergency access.
6. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Standards of Significance for Intersection Level of Service and Delay (Menlo Park Transportation Impact Analysis Guidelines & Town of Atherton Public Works Department). The criteria for determining if the proposed Project would create a significant adverse impact on intersections are described below:

- A project is considered to have a potentially "significant" traffic impact if the addition of project traffic causes an intersection on a collector street operating at LOS A through C to operate at an unacceptable level (LOS D, E or F) or have an increase of 23 seconds or greater in average vehicle delay, whichever comes first. A potential "significant" traffic impact would also occur if a project causes an intersection on arterial streets or local approaches to State-controlled signalized intersections operating at LOS A through D to operate at an unacceptable level (LOS E or F) or have an increase of 23 seconds greater in average vehicle delay, whichever comes first.
- A project is also considered to have a potentially "significant" traffic impact if the addition of project traffic causes an increase of more than 0.8 seconds (4 seconds for intersections in the Town of Atherton) of average delay to vehicles on all critical movements for intersections operating at a near term LOS D through F for collector streets and at a near term LOS E or F for arterial streets. For local approaches to State-controlled intersections, a project is considered to have a potentially "significant" impact if the addition of project traffic causes an increase of more than 0.8 seconds of delay to vehicles on the most critical movements for intersections operating at a near term LOS E or F.

It should be noted that software projected delays greater than 120 to 150 seconds on stop sign controlled intersection approaches are not totally reliable nor likely to occur on a regular basis, as drivers will find alternate routes to travel. However, they have been reported in this study as the change in delay is a referenced significance criteria for both Atherton and Menlo Park.

Standards of Significance for Intersection Signal Warrant: The proposed Project would create a significant impact if it increases peak hour Base Case volumes at an unsignalized intersection above peak hour (Warrant #3) criteria levels. If Base Case volumes already exceed peak hour warrant criteria levels, Project traffic would result in a significant impact if it increases volumes by 1 percent or more.

Standards of Significance for Pedestrian and Bicycle Facilities: The proposed Project would create a significant impact related to pedestrian or bicycle facilities if one or more of the following criteria are met or exceeded:

- The Project would not provide adequate pedestrian or bicycle facilities to connect to the area circulation system, or
- Vehicles would cross pedestrian facilities on a regular basis without adequate design and/or warning systems, causing safety hazards, or
- The Project design would cause increased potential for bicycle/vehicle conflicts

EXISTING WITH PROJECT INTERSECTION IMPACTS

Weekday PM Peak Hour

The weekday PM Peak Hour is generally when there are the most vehicles on the roadways and therefore the highest congestion levels. Because traffic from a new Project will be added to existing traffic on roadways, the PM Peak Hour is studied because this is generally when the greatest impacts could occur. (The Project does not add traffic to the AM Peak Hour.)

Impact Traffic-1: **Existing Intersection Operation.** While largely the same as the existing use, the proposed Project would result in some increases in vehicle trips to the area due to assumed increases in participation and spectators for the sports activities. However, the increased weekday PM Peak Hour traffic would not degrade operation of any analyzed intersection below acceptable level of service standards, contribute significantly to intersections already operating below acceptable level of service standards, or trigger any signal warrant criteria levels for unsignalized intersections. Existing level of service and signal warrant impacts would be ***less than significant***.

Table 10.4 demonstrates that proposed Project traffic would not degrade operation of any analyzed intersection from acceptable to unacceptable levels. In addition, at the two intersections operating at unacceptable levels without Project additions (Valparaiso Avenue/Emilie Avenue – LOS E stop sign controlled Emilie Avenue approach and El Camino Real/Alejandra Avenue – LOS E stop sign controlled left turn on the Alejandra Avenue approach), expected increase in delay would be 0.6 seconds or less and not meet impact significance criteria levels.

The proposed Project would not increase volumes at any analyzed unsignalized intersection above peak hour signal warrant #3 criteria levels. Only the unsignalized Valparaiso Avenue/Emilie Avenue intersection would have PM commute peak hour without Project volumes approaching peak hour warrant #3 criteria levels. However, there would be no measurable increase in PM peak hour traffic passing through this intersection due to the Project and the 1 percent volume increase significance criteria level would not be satisfied.

Saturday Intersection Impacts: Spring Baseball Game and Fall Saturday College Football Game

While the weekday PM commute Peak Hour is generally when the highest impacts from a project are seen because that's the time when there are usually the most vehicles on the roadway system, a sports

field hosts large events on Saturdays. Traffic patterns on the roadway system tend to be different on Saturdays, and while background traffic levels are generally lower than during weekday PM commute Peak Hours, the potential for Saturday impacts have been assessed for a Spring Baseball Game and a Fall College Football Game.

Note that the Cartan Field parking lot would have right turn inbound and outbound access to southbound El Camino Real on the five Saturdays per year with Menlo College football games. No access would be provided at the El Camino Real driveway for other, smaller events, including baseball games. These details have been taken into account during this analysis.

Impact Traffic-2: **Saturday Intersection Operation**. The proposed Project would result in some increases in vehicle trips to the area due to assumed increases in participation and spectators for the sports activities, which can occur on Saturdays. However, this increased Saturday traffic would not degrade operation of any analyzed intersection below acceptable level of service standards, contribute significantly to intersections already operating below acceptable level of service standards, or trigger any signal warrant criteria levels for unsignalized intersections. Impacts related to Saturday levels of service and signal warrants would be ***less than significant***.

Spring Baseball Game

As shown in **Table 10.5**, proposed Project traffic arriving for a spring baseball game would not degrade existing condition operation of the El Camino Real/Alejandra Avenue or Alejandra Avenue/Emilie avenue intersections to unacceptable levels. At El Camino Real/Alejandra Avenue, Project traffic would increase delay for drivers in the stop sign controlled Alejandra Avenue approach left turn lane by one-tenth of a second; LOS D operation would be maintained. At Alejandra Avenue/Emilie Avenue, Project traffic would result in no change in delay and LOS A operation would be maintained.

Proposed Project traffic would not increase spring Saturday peak hour pre-baseball game volumes to meet peak hour signal warrant #3 criteria levels at either the El Camino Real/Alejandra Avenue or Alejandra Avenue/Emilie Avenue intersections.

Fall Football Game

As shown in **Table 10.6**, Project traffic would not degrade existing condition operation of the El Camino Real/Alejandra Avenue or El Camino Real/Isabella Avenue intersections during pre-game peak hour traffic activity associated with a Menlo College home football game. Unsignalized operation of the left turn lane on the Alejandra Avenue approach to El Camino Real would remain LOS E, but delay would only be increased by 0.1 second, which does not meet impact significance criteria levels. Operation of the Isabella Avenue stop sign controlled approach to El Camino Real would remain an acceptable LOS C with the addition of Project traffic. Average control delay for turns from Isabella Avenue would increase by 0.3 seconds due to the increase in U-turn movements from northbound to southbound El Camino Real, as drivers access the Cartan Field parking lot from southbound El Camino Real. This increased delay is less than the significance criteria levels of an increase of more than 0.8 seconds.

Proposed Project traffic would not increase fall Saturday peak hour pre-football game volumes to meet peak hour signal warrant #3 criteria levels at either the El Camino Real/Alejandra Avenue or El Camino Real/Isabella Avenue intersections.

NEAR TERM CUMULATIVE YEAR 2016 WITH PROJECT WEEKDAY PM PEAK HOUR INTERSECTION IMPACTS

Impact Traffic-3: **Near-Term Intersection Operation**. The proposed Project would result in some increases in weekday PM commute Peak Hour vehicle trips to the area due to assumed increases in participation and spectators for the sports activities that would be added to other near-term traffic increases in the area. However, increased weekday PM Peak Hour Project traffic would not degrade operation of any analyzed intersection below acceptable level of service standards, contribute significantly to intersections already operating below acceptable level of service standards, or trigger any signal warrant criteria levels for unsignalized intersections under near-term cumulative conditions. Near-term level of service and signal warrant impacts would be ***less than significant***.

Table 10.4 demonstrates that proposed Project traffic would not degrade weekday PM commute peak hour operation of any analyzed intersection from acceptable to unacceptable levels in the near-term conditions. In addition, at the two intersections projected to have unacceptable without Project operation (Valparaiso Avenue/Emilie Avenue – LOS F stop sign controlled left turn on the Emilie Avenue approach and El Camino Real/Alejandra Avenue – LOS F stop sign controlled left turn on the Alejandra Avenue approach), increased delays would be 0.8 seconds or less and not meet impact significance criteria levels.

The proposed Project would not increase weekday PM commute volumes at any analyzed unsignalized intersection above peak hour signal warrant #3 criteria levels in the near-term conditions. No unsignalized intersections would have PM commute peak hour without Project volumes meeting peak hour warrant #3 criteria levels.

LONG TERM CUMULATIVE YEAR 2035 WITH PROJECT WEEKDAY PM PEAK HOUR INTERSECTION IMPACTS

Impact Traffic-4: **Long Term Intersection Operation**. The proposed Project would result in some increases in weekday PM commute Peak Hour vehicle trips to the area due to assumed increases in participation and spectators for the sports activities that would be added to other long-term traffic increases in the area. However, increased weekday PM Peak Hour Project traffic would not degrade operation of any analyzed intersection below acceptable level of service standards, contribute significantly to intersections already operating below acceptable level of service standards, or trigger any signal warrant criteria levels for unsignalized intersections under long-term cumulative conditions. Long-term level of service and signal warrant impacts would be ***less than significant***.

As shown in **Table 10.4**, proposed Project traffic would not degrade operation of any analyzed intersection from acceptable to unacceptable levels under long-term cumulative conditions. In addition, at the three intersections projected to have unacceptable without Project operation (Valparaiso Avenue/Emilie Avenue – LOS F stop sign controlled left turn on the Emilie Avenue approach: El Camino Real/Alejandra Avenue – LOS F stop sign controlled left turn on the Alejandra Avenue approach and El Camino Real/Valparaiso Avenue – LOS E signalized operation), expected increases in delay would be 0.3 seconds or less and not meet impact significance criteria levels.

The proposed Project would not increase weekday PM commute volumes at any analyzed unsignalized intersection above peak hour signal warrant #3 criteria levels under long-term cumulative conditions.

Only the unsignalized Valparaiso Avenue/Emilie Avenue intersection would have PM commute peak hour without Project volumes approaching peak hour warrant #3 criteria levels. However, there would be no measurable increase in PM peak hour traffic passing through this intersection due to the Project and the 1 percent volume increase significance criteria level would not be satisfied.

VEHICLE QUEUING IMPACTS

Impact Traffic-5: Football Game Vehicle Queuing on El Camino Real at Alejandra Avenue and Isabella Avenue. The northbound El Camino Real left turn lanes serving Alejandra Avenue and Isabella Avenue would experience increased left and U-turns during the two hours before the start of a Menlo College football game. Existing queuing at these intersections is on the border or beyond available storage lengths and would extend beyond available storage at both locations as spectators arrive for college football games. 95th percentile queuing in El Camino Real northbound left turn lanes at Isabella Avenue and Alejandra Avenue during pre-game inbound traffic flow on a football Saturday would be a ***significant impact***.

In particular, when access is allowed into the Cartan Field parking lot from southbound El Camino Real, northbound El Camino Real traffic will have two options to access the Cartan Field lot: turn left to Alejandra Avenue and then into the lot via Alejandra Avenue, or proceed to Isabella Avenue, conduct a U-turn to southbound El Camino Real and then into the lot via southbound El Camino Real. The left turn lane on the northbound El Camino Real approach to Alejandra Avenue is 90 feet long, while the left turn lane on the northbound approach to Isabella Avenue is 50 feet long. During the peak hour of inbound traffic flow from El Camino Real to football game parking (10:45 to 11:45 AM), there would be a projected ± 90 left and U-turns from northbound El Camino Real at the Alejandra Avenue intersection, and ± 75 left and U-turns at the Isabella Avenue intersection. As shown in **Table 10.10**, based upon two traffic engineering analysis methodologies to determine queuing at unsignalized intersections, the 95th percentile queue in the northbound El Camino Real left turn lanes at Alejandra Avenue and Isabella Avenue during the peak inbound flow traffic hour before a football game would be on the border or beyond available storage lengths for without Project conditions. The addition of Project traffic and allowing access to the Cartan Field parking lot from southbound El Camino Real would extend 95th percentile queues beyond available storage at both locations.

Table 10.10: 95th Percentile Vehicle Queuing
El Camino Real Left Turn Lanes on NB Approaches to Alejandra Ave and Isabella Ave
(Saturday With Menlo College Football Game Starting at Noon)
10:45-11:45 AM*

Location	Storage (ft.)	Existing Vehicle Queuing Demand	
		W/O Project	With Project
El Camino Real Left Turn Lane on NB Approach to Alejandra Ave.	90’	76/103’**	111/107’**
El Camino Real Left Turn Lane on NB Approach to Isabella Ave.	50’	42/81’**	78/101’**

* Pregame hour with highest turns from El Camino Real to Alejandra Ave., 11/10/12 Homecoming game.
** Analysis methodology results using alternative queue length evaluation. Synchro-SIM Traffic software/Estimation of Max Queue Lengths at Unsignalized Intersections, John T. Gard, ITE Journal, Nov 2001.

Source: Crane Transportation Group –vehicle queuing analysis

Mitigation Measure

Traffic-5: **Football Game Queuing Improvements.** The following improvements shall be implemented at El Camino Real left turn lanes on the northbound approaches to both Isabella Avenue and Alejandra Avenue to address 95th Percentile queues on fall football Saturdays:

El Camino Real/Isabella Avenue

Eliminate right turn entry from southbound El Camino Real into the new Cartan Field parking lot. Maintain right turn exit from the lot to southbound El Camino Real to facilitate post-game outbound flow from the parking area and to allow pre-game traffic entering from Alejandra Avenue an easy exit if the Cartan Field parking lot is full.

El Camino Real/Alejandra Avenue

Lengthen the left turn lane on the northbound El Camino Real approach to Alejandra Avenue. This can be provided within the landscaped median just south of the intersection. Assuming prohibition of right turns from southbound El Camino Real into the Cartan Field parking lot as specified above, the left turn lane on the northbound El Camino Real approach to Alejandra Avenue would need to be lengthened from 90 up to at least 150 feet.

With implementation of access restriction and lengthened turn lane as specified in Mitigation Measure Traffic-5, impacts related to 95th percentile queuing are mitigated to a ***less than significant level***.

BICYCLE AND PEDESTRIAN IMPACTS

Impact Traffic-6: **Pedestrian and Bicycle Circulation**. While the upgraded facility could be a greater draw to participants and spectators, with the addition of the pool and additional parking at Cartan Field, the anticipated number of pedestrians and bicycles crossing roadways would be anticipated to be the same or reduced. Additionally, on-site pedestrian circulation would be improved. While the majority of the impact related to pedestrian and bicycle circulation would be beneficial or less than significant, a ***potentially significant*** impact could be exacerbated for pedestrians choosing to walk in the roadway instead of the southern sidewalk parallel to Alejandra Avenue between Wunderlich Field and Cartan Field.

No sidewalks or all-weather pathways are proposed adjacent to Cartan Field along El Camino Real or Alejandra Avenue as part of the Project. A “grand concourse” paved walkway would be built through the entire length of Cartan Field in a north-south direction between the baseball diamonds (to the west) and the tennis courts, aquatic center and football/soccer/lacrosse field (to the east). It would extend northerly from the existing crosswalk on Alejandra Avenue that would be just west of the field’s Alejandra Avenue parking lot driveway. Shorter paved walkways would also be provided internal to the site along the north and south ends of the football/soccer/lacrosse field and along the east side of the aquatic center and internal to the tennis courts complex.

There is currently little or no pedestrian traffic along the Cartan Field frontages and very few pedestrians crossing El Camino Real at Alejandra Avenue during all surveyed times other than just before or after a college football game. This pattern during all times other than a football Saturday would not be expected to change with the proposed Project. However, on a college football Saturday the Project’s larger Cartan Field parking lot could accommodate vehicles from some spectators that are

now parking on the east side of El Camino Real either on-street on in the office parking lot at 1550 El Camino Real officially used by the college for overflow parking. This would tend to reduce the number of pedestrians crossing El Camino Real at Alejandra Avenue both before and after each football game. In addition, the larger Cartan Field parking lot would also accommodate some football spectator vehicles that are now parking in lots within the college campus. This would reduce the number of pedestrians crossing Alejandra Avenue before and after each football game. Also, movement of aquatic activities to Cartan Field would eliminate some pedestrian crossings of Alejandra Avenue as spectators who now park at Cartan Field will no longer be required to access the swimming facilities in the middle of the college campus. These would be positive pedestrian impacts.

Concern has been raised about pedestrians traveling between the college campus from the driveway adjacent to Wunderlich Field easterly to Cartan Field in the shoulders or in Alejandra Avenue, and not using the sidewalk on the south side of the street between Wunderlich Field and the formal crosswalk at the entrance to Cartan Field. This concern would continue with the proposed Project.

No bicycle lanes or pathways are proposed along El Camino Real or Alejandra Avenue adjacent to Cartan Field as part of the Project. Likewise, no bicycle lanes or pathways are proposed internal to Cartan Field as part of the Project. Little bicycle usage was surveyed between Cartan Field and the college or school, so no impact is expected.

Pedestrian impacts would be positive with the exception of additional pedestrian traffic potentially walking along or on Alejandra Avenue between Wunderlich Field and Cartan Field, while bicycle impacts would be less than significant.

Mitigation Measure

Traffic-6: **Wayfinding and Sidewalk/Street Barrier Enhancements.** Provide new fencing or barrier landscaping as well as signage at the Wunderlich Field driveway connection to Alejandra Avenue to direct pedestrians destined for Cartan Field to use the sidewalk on the south side of the street to access the formal crosswalk just west of the Cartan Field parking lot entrance. The School and College shall monitor the success of the implemented mitigation and, if required, provide additional measures to eliminate pedestrian use of Alejandra Avenue as a walkway between the entrances to Cartan Field and Wunderlich Field.

With implementation of fencing or barrier landscaping as well as signage to channel pedestrians to the sidewalk as specified in Mitigation Measure Traffic-6, impacts related to pedestrians walking along Alejandra Avenue would be reduced to a ***less than significant level***.

TRANSIT IMPACTS

Impact Traffic-7: **Transit Use.** The proposed Project would not be expected to result in any significant change in transit ridership to or from the field. Transit impacts would be ***less than significant***.

PARKING DISCUSSION

This report presents a parking analysis for informational purposes, included in more detail in the full parking study as Appendix F.

Parking conditions are not static, as parking supply and demand varies from day to day, from day to night, and from month to month. Hence, the availability of parking spaces (or lack thereof) is not a

permanent physical condition, but changes over time as people change their modes and patterns of travel.

Parking deficits are considered to be social effects, rather than impacts on the physical environment as defined by CEQA. Under CEQA, a Project's social impacts need not be treated as significant impacts on the environment. Environmental documents should, however, address the secondary physical impacts that could be triggered by a social impact (CEQA Guidelines § 15131(a)). The social inconvenience of parking deficits, such as having to hunt for scarce parking spaces, is not an environmental impact, but there may be secondary physical environmental impacts, such as increased traffic congestion at intersections, air quality impacts, safety impacts, or noise impacts caused by congestion.

The Project's proposed 168-space parking lot is an increase from the existing 65 spaces and is projected to be adequate to accommodate spectator and coach parking demand for all combinations of future Menlo School and Menlo College sporting events, with the exception of college football games on five fall Saturdays. This parking inadequacy occurs under existing conditions as well as future conditions with the proposed Project. Rather than exacerbate the conditions, the proposed Project increases the parking provisions at the site more than demand is increased. The addition of a second driveway to the parking area for large events also simplifies on-site circulation.

In summary, the large game parking deficiency is an existing condition that will be improved, though not avoided, with the proposed Project. The proposed Project will not cause or exacerbate direct or secondary effects related to parking deficiencies. Therefore, parking deficiency would not be considered a direct or secondary environmental impact of the proposed Project.

However, a concern has been raised by residents along Isabella Avenue that they will experience on-street parking from spectators attending major events at Cartan Field (such as Saturday football games) due to the increased ease of pedestrian access to Cartan Field from the north via the new right turn in/right turn out driveway along El Camion Real. It is agreed that this could be a more attractive options to spectators following Project implementation. However, as noted above, parking itself is a social, as opposed to environmental, consideration, and would not in itself be considered an impact on the environment. Additionally, the Town has no constraints as to who uses public on-street parking or criteria against which to judge the impact of use of on-street public parking for potentially four hours on five Saturdays of the year. Given the infrequency of the expected impact, the potential for spectator parking on Isabella Avenue during large football games would not have the potential to rise to the level of a secondary environmental impact. The potential for spectator parking on Isabella Avenue is not considered a significant direct or secondary environmental impact.

This page intentionally left blank

11

OTHER CEQA CONSIDERATIONS

INTRODUCTION

This chapter of the Draft EIR contains discussion of the following additional CEQA considerations:

- Mandatory Findings of Significance
- Significant Irreversible Modifications in the Environment
- Growth Inducing Impacts

MANDATORY FINDINGS OF SIGNIFICANCE

Appendix G of the CEQA Guidelines (Environmental Checklist) contains a list of mandatory findings of significance that may be considered significant impacts if any of the following occur:

- Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of California history or prehistory?
- Does the project have impacts that are individually limited, but cumulatively considerable?
- Does the project have environmental effects which will cause substantial adverse effects on human beings either directly or indirectly?

QUALITY OF THE ENVIRONMENT

Project implementation would lead to loss of a historic resource and increases in noise levels at residences on the Project's northern boundary, as discussed in this EIR. All other impacts of the Project are considered to be less than significant or reduced to that level with mitigation. There would be no additional potential to degrade the quality of the environment that have not been otherwise assessed and identified in this EIR.

CUMULATIVE IMPACTS

The Project is located within a developed urban environment. The cumulative context for analysis in this EIR includes the existing development as well as the cumulative buildout under the Town of Atherton General Plan. While the College and School have future plans to modify their respective campuses, as outlined in a Master Plan, there are no projects currently planned for the near term. Anticipated Menlo College enrollment increases to their permitted cap were taken into account.

As discussed in the preceding chapters of this EIR, implementation of the Project would not have impacts that are individually limited but cumulatively considerable provided all policies, rules and regulations of all relevant governing bodies are adhered to, and the mitigation measures contained within this document are implemented.

ADVERSE EFFECTS ON HUMAN BEINGS

The Project would not have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly. Construction-period emissions and potential vehicle/pedestrian conflicts are ***less than significant with mitigation***. The Project would not expose people to significant new hazards. There would be no other adverse effects on human beings.

SIGNIFICANT IRREVERSIBLE MODIFICATIONS IN THE ENVIRONMENT

An EIR must identify any significant irreversible environmental changes that could be caused by a project. These may include current or future uses of non-renewable resources, and secondary or growth-inducing impacts that commit future generations to similar uses. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified. The *CEQA Guidelines* describe three distinct categories of significant irreversible changes: 1) changes in land use which would commit future generations to specific uses; 2) irreversible changes from environmental actions; and 3) consumption of non-renewable resources.

Changes in Land Use Which Would Commit Future Generations

The Project is the upgrade of an existing athletic facility and would not constitute a change in land use which would commit future generations. However, it should be noted that the relocation of specific activities on the site would result in noise increases at some adjacent residential lots. It can be assumed that, once built, the location of specific uses would be expected to remain in the new location for the foreseeable future and thereby result in a commitment to increased noise levels at those properties.

Irreversible Changes from Environmental Actions

This Project would contribute to regional emissions of air pollutants and greenhouse gasses, largely from increased vehicle emission of spectators traveling to and from the site. However, the level of impact was determined to be less than significant and is expected to be further reduced over time as regulations and changes in travel habits lead to reduced vehicle emissions.

Consumption of Nonrenewable Resources

Consumption of nonrenewable resources can include increased energy consumption, conversion of agricultural or forested lands, and lost access to mining reserves. The Project would not result in the loss of agricultural or forested lands or mining reserves. Development of the Project area as proposed could result in the commitment of nonrenewable resources (e.g., gravel and petroleum products) and slowly renewable resources (e.g., wood products) used in construction. The operation of the proposed use would also require commitment of water and energy resources (e.g., petroleum products for vehicle operations, natural gas and electricity for lighting, heating, and cooling, and water for restrooms). However, the relative amount of resource use is low and would comply with applicable regulations.

GROWTH INDUCING IMPACTS

The Project is the upgrade of an existing athletic facility for a private College and School and is not tied to planned enrollment increases at Menlo College. (Menlo School is already operating at allowed capacity.) The Project does not include housing nor would it be expected to substantially increase area employment. Surrounding areas are already mostly developed as part of the Town of Atherton or City of Menlo Park. Development of the Project site would not have a growth-inducing effect.

12

ALTERNATIVES

INTRODUCTION

The California Environmental Quality Act Guidelines (CEQA Guidelines, 1970, as amended, Section 15126.6) require an EIR to include a discussion of a reasonable range of alternatives to the proposed Project. The CEQA Guidelines also require that the EIR explain why specific Project alternatives considered at one time were rejected in favor of the proposed Project. The selection of alternatives is to be guided by the provision of reasonable choices and the promotion of informed decision making and informed public participation. An EIR need not evaluate alternatives that would have effects that cannot be determined, or for which implementation would be remote and speculative.

The Guidelines also require that the EIR specifically evaluate a "no project" alternative within this discussion and that an "environmentally superior" alternative be identified (Section 15126.6 [e]).

The alternatives addressed in this EIR were selected based on the following factors:

1. The extent to which the alternative would accomplish most of the basic Project objectives.
2. The extent to which the alternative would avoid or lessen any of the identified significant environmental effects of the Project (discussed in Chapters 4 through 11).
3. The potential feasibility of the alternative (as discussed in this Chapter).
4. The extent to which the alternative contributes to a "reasonable range" of alternatives necessary to permit a reasoned choice.

The proposed Project is fully described in Chapter 3 of this EIR (Project Description). The environmental consequences are addressed in Chapters 4 through 11 of this EIR.

PROJECT OBJECTIVES

CEQA requires the analysis of alternatives that would feasibly attain "most of the basic objectives of the Project but would avoid or substantially lessen any of the significant effects of the Project."[1] Therefore, the stated objectives can be used as a metric against which an alternative can be measured when determining overall feasibility.[2] Additionally, CEQA requires the evaluation of a proposed Project to address only impacts to the physical environment; economic and social effects can be analyzed only as one link in a chain of cause and effect from a proposed decision (e.g., physical

[1] *CEQA Guidelines*, Section 15126.6 (a)

[2] Ibid., Section 15126.6 (a)

changes caused, in turn, by economic and social changes).[3] However, economic viability can be considered when determining the feasibility of a project alternative.[4]

The following are the objectives that would be fulfilled by the proposed Project. Alternatives will be evaluated in part based on their ability to meet these objectives.

1. Upgrade aging athletics facilities to modern standards.
2. Continue physical separation of Menlo College and Menlo School facilities.
3. Improve pedestrian circulation and experience.
4. Increase available parking to help accommodate vehicles for large events and improve flow during these events by opening a second access point from the parking area.
5. Preserve and enhance screening landscaping at boundaries.
6. Minimize sound at adjacent neighbors through state-of-the-art PA systems and site planning to use buildings as noise barriers where possible.

PROJECT IMPACTS

The Project would result in two significant impacts that cannot be reduced through implementation of mitigation:

Cultural Resources: The Project includes demolition of Perry Stable, which is considered a historic resource due to its connection with the racehorse Phar Lap and his contentious death. Though a memorial would be created (Mitigation Measure Cultural-1), the memorial itself would not qualify as a historic resource, but only a commemoration. Therefore, even with mitigation, the Project's impact relating to loss of a historic resource would remain significant and unavoidable.

Noise: The Project would result in noticeably increased noise levels from the football/soccer/lacrosse field at three residential properties at the northern boundary of the Project site due to the field and grandstands moving closer to these properties with the Project. With implementation of a noise barrier (Mitigation Measure Noise-2a), appropriately designed PA system (Mitigation Measure Noise-2b), and constrained grandstand seating during smaller events (Mitigation Measure Noise-2c), the noise increase would be reduced somewhat, but would remain significant and unavoidable.

The Project would result in potentially significant impacts associated with the following topics, which would be significant without the implementation of mitigation measures, but would be reduced to a less than significant level if the mitigation measures recommended in this document are implemented.

- Air Quality
- Biological Resources
- Cultural Resources
- Transportation and Circulation

All other topic areas would have no impact or less than significant impacts only.

[3] *CEQA Guidelines*, Section 15131.

[4] Ibid., Section 15126.6(f)(1).

ALTERNATIVES ANALYSIS

The alternatives analysis is presented as a comparative analysis to the proposed Project. A project may have the potential to generate significant impacts, but changes to certain features may also afford the opportunity to avoid or reduce such impacts. The following alternatives analysis focuses on reducing or avoiding the two identified significant and unavoidable impacts and also compares the potential significant environmental impacts of the alternatives with those of the proposed Project for each of the environmental topics analyzed in detail in Chapters 4 through 18 of the EIR. Feasibility of implementation and ability to meet objectives are also discussed.

SELECTION OF ALTERNATIVES

A. No Project Alternative

B. Perry Stable Retention Alternative

C. Relocated Football Field Alternative

Three alternatives were evaluated. All of the alternatives are located on the Project site. The alternatives were chosen to reduce impacts that are significant and unavoidable under the proposed Project. The three alternatives to be analyzed in comparison to the proposed Project are as follows:

Alternative A: No Project Alternative. Alternative A is a “no project” alternative. It assumes the proposed Project is not approved and the site would remain as it is today.

Alternative B: Perry Stable Retention Alternative. Alternative B assumes retention of the Perry Stable in its current location. The bioretention swale planned for that location would instead need to be accommodated elsewhere on the site or replaced with other adequate stormwater measures. This could result in reduction of some other building space, parking stalls and/or a tennis court.

Alternative C: Relocated Football Field Alternative. Alternative C locates the football / soccer / lacrosse field farther from the north property line to lower noise levels at the residences to the north. This alternative site plan swaps the location of the football field with that of the tennis courts and the aquatic center, as shown in **Figure 12.1**. This alternative also retains Perry Stable, as in Alternative B. Note that additional revisions were made to suit desired site usage, including expansion of the track to include a true turn and space for field event practice (shot put, long jump, etc.). With the expansion of the track, there are 2 less tennis courts and 29 less parking spaces proposed than under the Project (a total of 139).

Alternatives Considered and Rejected

As described above, Section 15126.6(c) of the CEQA Guidelines requires an EIR to identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency’s determination.

This site is unique in that it is already developed as an athletic facility for the College and School. Therefore, a different location was not considered a reasonable alternative for purposes of this environmental review.

In the scoping meeting, neighbors suggested various alternatives to site access and configuration of neighborhood roadways that could have the potential to limit College and School-related vehicles on neighborhood streets. As analyzed in Chapter 10: Transportation and Circulation, the Project would only marginally increase traffic to the area and would not significantly contribute to any impacts on neighborhood streets. Such alternatives were not further explored in this document as they are unrelated to this Project's impacts.

No additional alternatives were considered.

Every possible alternative to the Project cannot be fully evaluated. Alternatives A, B and C satisfy the requirement to consider and discuss "a range of reasonable alternatives to the project" pursuant to CEQA Guidelines section 15126.6. As discussed in the descriptions above, these alternatives were chosen as reasonable alternatives at this site and no additional alternatives were identified that would substantially contribute to a meaningful evaluation, analysis, and comparison of Project impacts.

ALTERNATIVE A: NO PROJECT ALTERNATIVE

Impact Analysis

Impact Summary

Under a "No **P**roject" Alternative, the Project site would remain as it is today. There would be no impacts on the environment, because no changes to the site would occur. Significant and Unavoidable impacts relating to demolition of a historic resource and increased noise at northern properties would be avoided. It can be assumed that a Noise Ordinance Amendment would be filed to address existing noise levels at the site.

Ability to Accomplish Project Objectives and Feasibility

A No Project alternative would not meet any of the Project objectives. While it can be expected piecemeal improvements would be made over time as part of the continued use of the site, for this assessment, we are assuming the type and location of uses would not change.

ALTERNATIVE B: PERRY STABLE RETENTION ALTERNATIVE

Impact Analysis

Impact Summary

Alternative B would have impacts the same as under the Project except that loss of the historic structure, Perry Stable, would be avoided.

Cultural

Permanent loss of Perry Stable through demolition is considered a significant impact of the Project that cannot be reduced below significance levels through creation of a memorial. The impact can only be avoided through retention of the structure, as proposed in Alternative B. Because the stable would be retained, Mitigation Measure Cultural-1 (a memorial) would not be required under Alternative B.

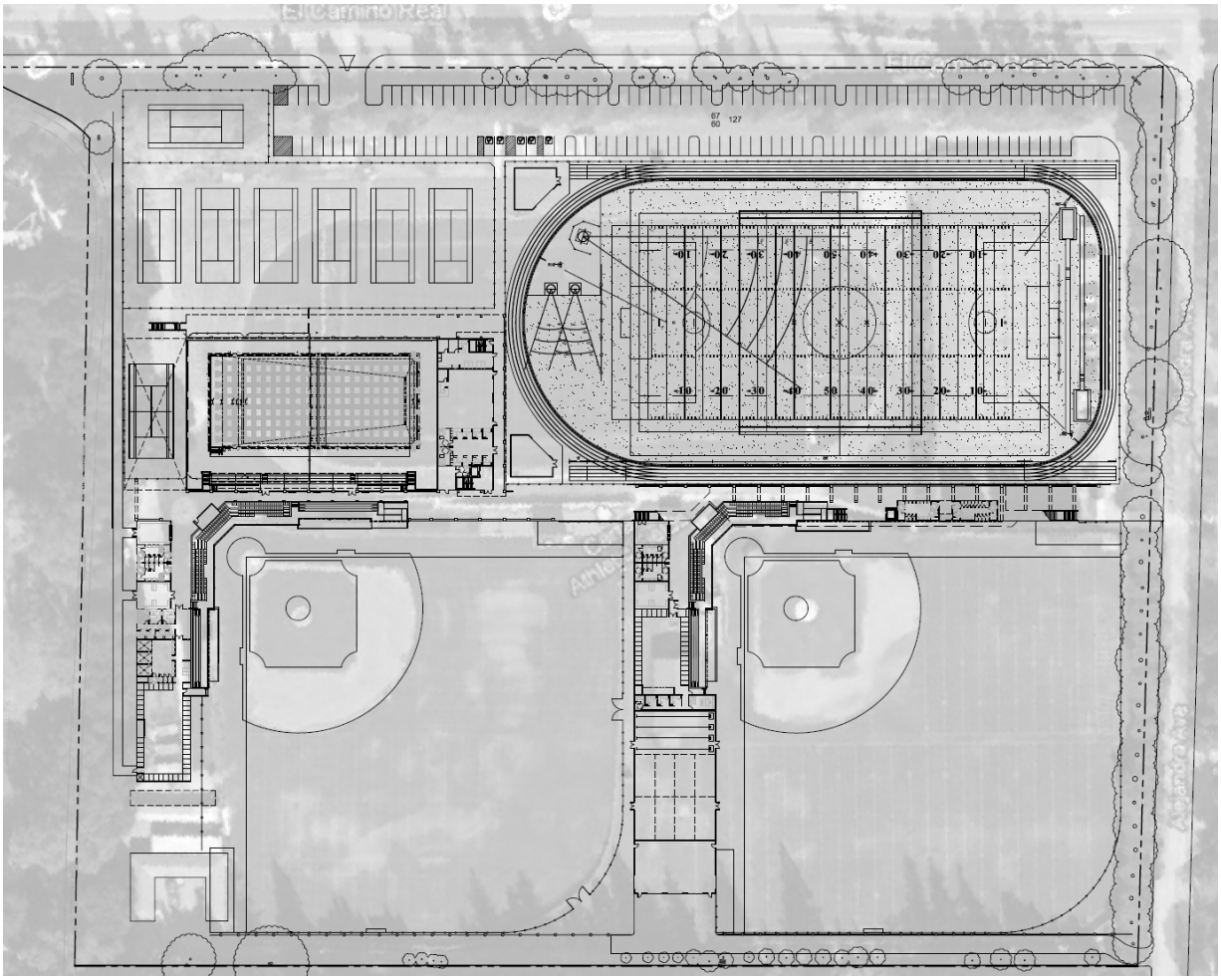


Figure 12.1: Relocated Football Field Alternative Site Plan

This page intentionally left blank

Noise

Alternative B would not substantially change the proposed noise conditions from those analyzed under the Project. The significant and unavoidable impact related to increased noise at northern properties would remain.

Other Environmental Topic Areas

Alternative B would not substantially modify construction activities at the site or proposed use of the site following construction from that proposed under the Project. Alternative B would have substantially the same impacts and require the same mitigation in the areas of Air Quality, Biological Resources, Cultural Resources (as it applies to subsurface resources), and Transportation and Circulation.

Ability to Accomplish Project Objectives and Feasibility

Alternative B would meet all Project objectives, though it could result in small reductions in either new building space or parking stalls, which could result in a slightly lesser ability to meet objectives relating to physical separation of Menlo College and Menlo School facilities and/or increasing available parking.

ALTERNATIVE C: RELOCATED FOOTBALL FIELD ALTERNATIVE

Impact Summary

Alternative C would have impacts the same as under the Project except that both the Significant and Unavoidable impacts under the Project, namely loss of a historic structure and increased noise from the football/soccer/lacrosse field, would be avoided.

Cultural

Alternative C proposes retention of the Perry Stable, as in Alternative B, and therefore avoidance of a significant and unavoidable impact. Because the stable would be retained, Mitigation Measure Cultural-1 (a memorial) would not be required under Alternative C.

Noise

Under Alternative C, the noise from the football/soccer/lacrosse practices and games will decrease at the homes to the north with respect to the existing conditions. However, the noise from tennis would increase and the aquatics facility will be higher than under the Project site plan. To address the noise from tennis playing, Alternative C includes a 10 foot tall solid fence along the north property line. Alternative C also includes a 12 foot high solid wall along the north and west sides of the aquatics facility to reduce the noise levels at the residences to the north.

Table 12.1 compares the existing and future (with Alternative C) average noise levels from the various activities. For the most part, the noise level from existing activities will be decreased with Alternative C over existing conditions due to increased distance or acoustical shielding from the proposed buildings and walls. The noise levels from the various activities are not combined for this analysis because they would generally not occur at the same time.

Table 12.2 presents the typical maximum noise levels from the various activities with Alternative C. The maximum noise levels can be compared with the Noise Ordinance limit of 75 dBA (as amended).

Table 12.3 shows the Average Annual CNEL under the existing and future (with Alternative C) conditions. The CNEL takes into account the increased use of certain activities such as summer baseball and tennis. This comparison indicates that the noise contribution of the intermittent athletic activities is small compared to the relatively constant ambient noise exposure in the Project area.

Table 12.1: Existing and Future Average Noise Level (Leq) during Activities with Alternative C (without ambient noise)

Source	L_{eq} (dBA) at North Property Line			L_{eq} (dBA) at West Property Line		
	Existing	Future with Alt. C	Increase with Alt. C	Existing	Future with Alt. C	Increase with Alt. C
Football Games	67.5	60.2	-7.3	63.1*	60.4	-2.7
Soccer or Lacrosse Games	59.1	51.8	-7.3	54.7*	52.0	-2.7
Football, Soccer or Lacrosse Practice	50.1	42.6	-7.5	45.7*	32.5	-13.2
Baseball Games	64.3	52.2	-12.1	62.9	64.4	1.6
Baseball Practice	56.3	44.2	-12.1	54.9	56.4	1.6
Swim Meets	NA	55.4	NA	NA	48.5	NA
Water Polo Matches	NA	53.1	NA	NA	46.2	NA
Aquatics Practices	NA	50.4	NA	NA	43.5	NA
Tennis – All Courts In Use	30.2	44.2	14.0	32.1	30.8	-1.3

* The existing and future football/soccer/lacrosse activity noise is assessed for the west property line receivers at the south side of the study area. This is because the field would be moving somewhat closer to these homes, and therefore the assessment is more conservative. (This explains the difference between the existing noise levels reported in this table and those reported for the Project, in Table 9.5, which considered levels at the northern end of the west property line, nearest the field for that site plan.)

Table 12.2: Typical Maximum Noise Level (Lmax) during Activities with Alternative C

Source	Typical L_{max} (dBA)					
	North Property Line			West Property Line		
	Existing	Future with Project	Future with Alt C	Existing	Future with Project	Future with Alt C
Football Games	82	89	75	81	75	69
Soccer or Lacrosse Games	74	81	67	73	67	61
Football, Soccer or Lacrosse Practice	65	71	57	64	47	51
Baseball Games	72	60	60	71	73	73
Baseball Practice	66	53	52	64	64	64
Swim Meets	NA	50	69	NA	56	59
Water Polo Matches	NA	47	66	NA	55	58
Aquatics Practices	NA	39	58	NA	46	49
Tennis – All Courts In Use	43	46	57	45	48	44

Table 12.3: Existing and Future with Alternative C Average Annual Noise Level (CNEL), dBA

Noise Source	North Property Line			West Property Line		
	Existing	Future with Alt. C	Increase with Alt. C	Existing	Future with Alt. C	Increase with Alt. C
Football/Soccer/Lacrosse	46.3	39.9		45.3	34.0	
Baseball	49.7	36.9		47.9	50.0	
Aquatics	NA	31.4		NA	33.3	
Tennis	15.2	35.0		16.8	21.6	
Total Sports	51.3	42.9		49.8	50.2	
Ambient	58.2	58.2		60.0	60.0	
Total Sports with Ambient	59.0	58.3	-0.7	60.4	60.4	0.0

For the most part, the noise level from existing activities will be decreased with Alternative C from existing conditions due to increased distance or acoustical shielding from the proposed buildings and walls. Under Alternative C, all activities would remain within amended Noise Ordinance limits of Lmax 75 dBA. Therefore, the Significant and Unavoidable impact identified for the Project would be reduced to less than significant and revised for Alternative C as follows:

Impact (Alt C) Noise-2: **Activity-Specific Noise Levels.** Alternative C would introduce new activities and related noise at the aquatics center and result in increased noise from some activities. However, Alternative C would not result in noise levels that exceed the Noise Ordinance limits at the nearby residential properties. This is a ***less than significant*** impact.

Alternative C already includes a noise barrier similar to that required by measure Noise-2a, so that measure would not be required for Alternative C. Mitigation Measures Noise--2b and -2c would not be necessary to reduce an impact under Alternative C, but could still be considered good neighbor recommendations.

Traffic

The traffic assessment for the Project would remain applicable for Alternative C with the same impacts, mitigation measures and resultant significance. While the amount of parking would be reduced under Alternative C compared to the proposed Project, it would still be a substantial increase over existing conditions and conclusions that the loss of parking would not constitute an environmental impact remain unchanged for Alternative C.

Other Environmental Topic Areas

Alternative C would not substantially modify construction activities at the site or proposed use of the site following construction from that proposed under the Project. Alternative C would have substantially the same impacts and require the same mitigation in the areas of Air Quality, Biological Resources, Cultural Resources, and Transportation and Circulation.

Ability to Accomplish Project Objectives and Feasibility

Alternative C would meet all Project objectives. However, with the revised site plan, building location could not be used to shield neighbors to the north from aquatics center noise. However, a combination of barriers at the aquatics center and at the Project boundary will act to shield some of this noise in place of building shielding. Alternative C would increase available parking, though to a lesser degree than under the Project, so would meet this objective to a somewhat lesser degree.

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

In addition to the discussion and comparison of impacts of the proposed Project and the alternatives, Section 15126.6 of the CEQA Guidelines requires that an “environmentally superior” alternative be selected and the reasons for such a selection disclosed. In general, the environmentally superior alternative is the alternative that would be expected to generate the least amount of significant impacts. Identification of the environmentally superior alternative is an informational procedure and the alternative selected may not be the alternative that best meets the goals or needs of the Town.

Alternative A, the No Project Alternative proposes only continuing use of the site with none of the changes currently proposed and therefore, would result in no environmental impacts. Alternative A would be the environmentally superior alternative.

The CEQA Guidelines also require that "if the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives" (CEQA Guidelines Section 15126.6(e)(2)). In general, the environmentally superior alternative minimizes adverse impacts to the environment, while still achieving the basic Project objectives.

Alternative C would be the next most environmentally superior alternative as both significant and unavoidable impacts of the Project (loss of a historic resource and noise increases over ordinance levels) would be avoided under Alternative C.

All Project impacts other than loss of a historic resource and noise increases at the northern residences are either less than significant or can be reduced to those levels through implementation of the mitigation contained in this Draft EIR. The assessment above focuses on these two impacts that are significant and unavoidable under the Project. All other impacts would be the same or similar under Alternatives B and C as compared to the Project and only marginally reduced for Alternative A and confined to reductions in already less than significant impacts.

This page intentionally left blank

13

REPORT PREPARERS

REPORT PREPARERS

Lamphier – Gregory
1944 Embarcadero
Oakland, Ca. 94606
510-535-6690

Lamphier-Gregory
(Primary Report Preparers and all analyses not detailed below)
Scott Gregory, President
Rebecca Gorton, Senior Planner

Environmental Vision
(Visual Modeling)
Marsha Gale, President

Zander Associates
(Biological Resources)
Leslie Zander, Principal Biologist

HortScience
(Arborist Report for Biological Resources)
Deanne Ecklund, ISA Certified Arborist #WE-9067A

William Self Associates
(Cultural Resources)
James M. Allan, Ph.D., RPA, Principal
Aimee L. Arrigoni, M.A., Historian

Rosen Goldberg Der & Lewitz (RDGL)
(Noise and Vibration)
Harold S. Goldberg, P.E., Principal
Alan Rosen, Principal

Crane Transportation Group
(Traffic and Circulation)
Mark D. Crane, P.E., Principal

CITY CONTACT

This document was prepared under the direction of Town of Atherton staff and in particular, Neal Martin, Town Planner.

This page intentionally left blank