PUBLIC REVIEW DRAFT

BURTON AND HIGHLANDS PARKS PROJECT ENVIRONMENTAL IMPACT REPORT

SCH NO. 2017052066

LSA

November 2017

NOTICE OF AVAILABILITY DRAFT ENVIRONMENTAL IMPACT REPORT CITY OF SAN CARLOS

DATE: November 20, 2017

TO: State Clearinghouse
State Responsible Agencies
State Trustee Agencies
Other Public Agencies
Interested Organizations

FROM: Kaveh Forouhi
Senior Engineer
City of San Carlos
600 Elm Street
San Carlos, CA 94070

SUBJECT: Notice of Availability of a Draft Environmental Impact Report (DEIR) for the Burton and Highlands Parks Project

LEAD AGENCY/SPONSOR: City of San Carlos Public Works Department

PROJECT TITLE: Burton and Highlands Parks Project

REVIEW PERIOD: November 20, 2017 through February 15, 2018

PUBLIC HEARING ON THE DRAFT EIR:

Wednesday, December 6, 2017 at 7:00 p.m.
San Carlos Council Chambers
600 Elm Street, San Carlos CA 94040

PROJECT LOCATION: Burton and Highlands Parks are located in the City of San Carlos in San Mateo County on the San Francisco Peninsula. Burton Park is located at 900 Chestnut Street in the City of San Carlos. The site is generally level and is bounded by Woodland Avenue and Chestnut Street to the north, Brittan Avenue to the east, Arroyo Avenue to the west, and Cedar Street to the southwest. Burton Park is surrounded by residential uses. The two fields that are a subject of this EIR at Burton Park are Madsen Field (currently with night lighting) and Flanagan Field (without night lighting). Highlands Park is located at 206 Aberdeen Drive in the City of San Carlos. The park is surrounded by residential uses and is bounded by Aberdeen Drive to the east and Melendy Drive to the south. The two fields that are a subject of this EIR at Highlands Park are Highlands Field (with night lighting) and Stadium Field (without night lighting).

PROJECT DESCRIPTION: The proposed project is intended to provide additional and improved night lighting at fields, also referred to as the "project sites," at Burton and Highlands Parks to allow for additional hours of play and assist in meeting the unmet demand for field space. The proposed project involves the installation of new light-emitting diode (LED) lights on the currently unlit Flanagan Field at Burton Park and the unlit Stadium Field at Highlands Park, as well as safety lighting, as necessary. The

project also includes upgrading the existing metal-halide lighting at Madsen Field at Burton Park and Highlands Field at Highlands Park with LED lights. The project also involves some traffic facility, parking and signage changes as well as changes in use of the fields at Highlands Park to make field use consistent with the rules governing all other City fields through the identification and evaluation of a modified project as contemplated by the terms of a 2010 Settlement Agreement with Save San Carlos Parks (SSCP).

Consistent with Section 15161 of the California Environmental Quality Act (CEQA) Guidelines, a project-level EIR has been prepared to analyze the potential impacts of replacement of existing lighting, and increased use at, Burton and Highlands Park.

PUBLIC AGENCY APPROVALS: The proposed Project would require approval and EIR certification by the City of San Carlos. The EIR will evaluate the impacts related to the issuance of the following approvals and permits from the City of San Carlos:

- Design Review approval
- Building permits
- Settlement Agreement Modified Project approval

ENVIRONMENTAL REVIEW: A Notice of Preparation of an EIR was issued by the City on May 24, 2017. A Draft EIR has now been prepared for the Project under the requirements of CEQA, pursuant to Public Resources Code Section 21000 et *seq.,* and the State CEQA Guidelines. The Draft EIR analyzes potentially significant environmental impacts in the following categories: Visual Resources, Transportation, and Noise. Cumulative impacts and alternatives to the Project are also analyzed. An Initial Study was also prepared, and included in Appendix B to the Draft EIR, that evaluated the project for all CEQA topics.

The City is hereby releasing the Draft EIR for public review. Copies of the Draft EIR are available for review to interested parties at City Hall at 600 Elm Street; or on the City's website at:
http://cityofsancarlos.org/depts/pr/prksfac/park_information/highlands_park/default.asp
and http://cityofsancarlos.org/depts/pr/prksfac/park_information/burton_park/default.asp

Members of the public, agencies and interested organizations are welcome to provide comments on the Draft EIR in writing or at the hearing on the Draft EIR to be held on December 6, 2017 before the Parks, Recreation and Culture Commission at 7:00 p.m. Comments should focus on whether the Draft EIR is sufficient in discussing possible impacts to the physical environment, ways in which potential adverse effects may be avoided or minimized through mitigation measures, and alternatives to the Burton and Highlands Parks project in light of the EIR's purpose to provide useful and accurate information about such factors.
Please address all written comments to Kaveh Forouhi, Senior Engineer, City of San Carlos Public Works Department, 600 Elm Street, San Carlos, California 94070; or via

email to KForouhi@cityofsancarlos.org with “Burton and Highlands Parks EIR” as the subject. Comments must be received no later than 5:00 p.m. on Thursday, February 15, 2018.

After all comments have been received, a Final EIR will be prepared, the Planning Commission will consider the information in the EIR and make a recommendation to City Council, and City Council will consider certification of the EIR and make a decision on the project at a public hearing, the dates of which are yet to be determined. A separate public notice of these hearings will be provided.

If you decide to challenge the EIR, or other actions of the City pertaining to the Burton and Highlands Parks project in court, you may be limited to raising only those issues raised at the public hearings described above or in written correspondence received by the Public Works Department at or prior to those hearings and during the public comment period.

For further information please contact Kaveh Forouhi, at (650) 802-4202 or via email at KForouhi@cityofsancarlos.org.

Kaveh Forouhi, PE, TE, QSD/QSP
Senior Engineer
Public Works Department

PUBLIC REVIEW DRAFT

BURTON AND HIGHLANDS PARKS PROJECT ENVIRONMENTAL IMPACT REPORT

SCH NO. 2017052066

Submitted to:

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LSA

November 2017

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APPENDICES

(Included on a compact disk located on the inside back cover of this Draft EIR)

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I. INTRODUCTION

A. PURPOSE OF THIS EIR

In compliance with the California Environmental Quality Act (CEQA), this focused Environmental Impact Report (EIR) describes the potential environmental consequences of the Burton and Highlands Parks Project (proposed project). This EIR is designed to inform the City of San Carlos decision-makers, responsible agencies and the general public of the proposed project and the potential physical impacts of project approval and implementation. This EIR examines potential impacts related to visual resources, transportation and circulation, and noise in detail. Based on the Initial Study prepared for the project, implementation of the proposed project would result in less-than-significant impacts to all other CEQA topics. This EIR also examines alternatives to the proposed project, and recommends a set of mitigation measures to reduce or avoid potentially significant physical impacts.

The City of San Carlos (City) is the Lead Agency for the environmental review of the proposed project. This EIR will be used by the City, responsible agencies, and the public in their review of the proposed project and associated approvals described below and in more detail in Chapter III, Project Description.

B. PROPOSED PROJECT

The proposed lighting project would be implemented at Burton Park and Highlands Park fields, also referred to as the "project sites." The proposed project involves the installation of new field light-emitting diode (LED) lights on the currently unlit Flanagan Field at Burton Park and the unlit Stadium Field at Highlands Park, as well as safety lighting, as necessary. The project also includes upgrading the existing metal-halide lighting at Madsen Field at Burton Park and Highlands Field at Highlands Park with LED lights. In addition, the project also involves some traffic facility, parking and signage changes and changes in use of the fields at Highlands Park to make field use consistent with the rules governing all other City fields.

C. EIR SCOPE

The City of San Carlos circulated a Notice of Preparation (NOP) that included a list of potential environmental effects that could result from the proposed project. The NOP was published on May 23, 2017, and the public comment period lasted from May 23, 2017, to June 23, 2017. The NOP was mailed to public agencies, organizations, and individuals likely to be interested in the potential impacts of the proposed project.

A public scoping meeting was held on June 13, 2017, before the end of the public comment period. The NOP, copies of each comment letter received, and a summary of oral comments made at the meeting are provided in Appendix A. Written comments received by the City and verbal comments received at the scoping meeting were taken into account during the preparation of the EIR.

Based on the preliminary analysis provided in the Initial Study (included as Appendix B), consultation with City staff, and review of the comments received as part of the scoping process, the following environmental topics are addressed in separate sections of this focused EIR:

A. Visual Resources
B. Transportation and Circulation
C. Noise

In the Initial Study, the City determined that the potential effects of the proposed project would be less-than-significant or have no impact on the following topics, and therefore, these topics are not studied in further detail in this EIR: agricultural and forestry resources; air quality; biological resources; cultural resources; geology and soils; greenhouse gas emissions; hazards and hazardous materials; hydrology and water quality; land use and planning; mineral resources; population and housing; public services; recreation; tribal cultural resources; and utilities and service systems. Each of these topics is addressed in the Initial Study provided in Appendix B and discussed briefly in Chapter VI, Other CEQA Considerations, under Effects Found Not to be Significant.

D. REPORT ORGANIZATION

This EIR is organized into the following chapters:

- *Chapter I – Introduction:* Discusses the overall EIR purpose, provides a summary of the proposed project, describes the EIR scope, and summarizes the organization of the EIR.
- *Chapter II – Summary:* Provides a summary of the impacts that would result from implementation of the proposed project, describes mitigation measures recommended to reduce or avoid significant impacts, and describes the alternatives to the proposed project.
- *Chapter III – Project Description:* Provides a description of the project sites, the project objectives, the proposed project, and uses of this EIR.
- *Chapter IV – Setting, Impacts and Mitigation Measures:* Describes the following for each environmental technical topic: existing conditions (setting), potential environmental impacts and their level of significance, and mitigation measures recommended to mitigate identified impacts. Potential adverse impacts are identified by levels of significance, as follows: less-than-significant impact (LTS), significant impact (S), and significant and unavoidable impact (SU). The significance of each impact is categorized before and after implementation of any recommended mitigation measures(s).
- *Chapter V – Alternatives:* Provides an evaluation of three alternatives to the proposed project, including the No Project alternative.
- *Chapter VI – Other CEQA Considerations:* Provides an analysis of growth-inducing impacts, significant irreversible changes, and effects found not to be significant.
- *Chapter VII – Report Preparation:* Identifies preparers of the EIR, references used, and the persons and organizations contacted.
- *Appendices:* The appendices contain the NOP and comments as well as background and technical information to support this Draft EIR.

II. SUMMARY

A. PROJECT UNDER REVIEW

This EIR has been prepared to evaluate the potential environmental impacts of the Burton and Highlands Parks Project (proposed project). The proposed project involves the installation of new field lighting on currently unlit fields at Burton and Highlands Parks and upgrading the existing lighting at the parks with light-emitting diode (LED) lights. In addition, the proposed project also involves changes in use of the fields at Highlands Park to make field use consistent with the rules governing all other City fields. Project changes would affect the terms of the 2010 Settlement Agreement between the City and Save San Carlos Parks (SSCP) regarding the use of Highlands Park. The proposed project is described in greater detail in Chapter III, Project Description.

B. SUMMARY OF IMPACTS AND MITIGATION MEASURES

This summary provides an overview of the analysis contained in Chapter IV, Setting, Impacts and Mitigation Measures. CEQA requires a summary to include discussion of: (1) potential areas of controversy; (2) significant impacts; (3) significant unavoidable impacts; (4) cumulative impacts; (5) proposed mitigation measures; and (6) alternatives to the proposed project. Each of these topics is summarized below.

1. Findings of the Initial Study

An Initial Study (included as Appendix B) was completed that identified and screened out environmental factors which are less-than-significant impacts and are not further studied in this EIR. These factors include: agricultural and forestry resources; air quality; biological resources; cultural resources; geology and soils; greenhouse gas emissions; hazards and hazardous materials; hydrology and water quality; land use and planning; mineral resources; population and housing; public services; recreation; tribal cultural resources; and utilities and service systems. With implementation of the mitigation measures identified in the Initial Study, impacts to these issue topics were determined to be less than significant. Table II-2, Summary of Impacts and Mitigation Measures, is included at the end of this chapter.

2. Potential Areas of Controversy

Letters and verbal comments received on the Notice of Preparation (NOP) raised a number of topics that commenters wished to see addressed in the EIR including:

- Concerns regarding altering the operational restrictions and parking and signage contained in the 2010 Settlement Agreement;
- Concerns that the project includes conversion of Stadium Field to artificial turf, and issues regarding the general quality and maintenance of the fields;
- Issues of light and glare from the new lights and an associated increase in noise from the additional hours of use;

- Concerns regarding an increase in traffic, parking on neighborhood streets, emergency access; idling cars and an associated increase in emissions that could affect air quality;
- Effects of new night lighting and noise on wildlife;
- Increase in illegal use of the parks with the new lighting; and
- Review and analysis of alternatives to the project.

Verbal comments offered by those in attendance at CEQA Scoping Session, held on June 13, 2017, included many of those offered in writing as comments on the NOP. Copies of the written comment letters and a summary of the verbal comments are included in Appendix A.

3. Significant Impacts

Under CEQA, a significant impact on the environment is defined as "…a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance." In addition to the air quality construction period impacts identified in the Initial Study Checklist, impacts in the following areas would be significant without implementation of mitigation measures, but would be reduced to a less-than-significant level if mitigations measures recommended in this report are implemented:

- Traffic
- Noise

The impacts and mitigation measures associated with these topics are contained in Table II-1 in this chapter.

4. Significant and Unavoidable Impacts

No significant and unavoidable impacts were identified for the project.

5. Cumulative Impacts

The proposed project would result in one cumulative traffic impact, TRA-2 that can be mitigated to a less-than-significant level as shown on Table II-1.

6. Proposed Mitigation Measures

Table II-1, Summary of Impacts and Mitigation Measures from the EIR, is included at the end of this chapter. Table II-1 includes all environmental impact statements, recommended mitigation measures, and the level of significance of the impact after recommended mitigation measures are implemented.

7. Alternatives to the Proposed Project

Chapter V includes the analysis of three alternatives to the proposed project to meet the requirements of CEQA to analyze a range of reasonable alternatives to the project that would feasibly attain most of the project's basic objectives and avoid or substantially lessen any of the significant effects of the project. The two project CEQA alternatives analyzed in Chapter V include:

- The CEQA-required **No Project alternative**. This alternative assumes that the project sites at Burton and Highlands Parks would remain in their existing conditions. The existing metal-halide lighting at Madsen Field at Burton Park and Highlands Field at Highlands Park would remain, no new lighting would be installed at the currently unlit fields at the two parks, and management and use of Highlands Park would remain inconsistent with the City's policies and management of other City fields.
- The **Reduced Project alternative**. To address the significant project-related traffic impact at the Cedar Street/Brittan Avenue intersection, this alternative assumes that no new lights would be installed at Flanagan Field at Burton Park; however the existing lights at Madsen field would be upgraded to LED lights. All of the proposed project changes to Highlands Park fields (improved lights, new field and safety lights, changes in use of the fields and parking and signage) would continue to occur under this alternative.
- The **Only Field Lighting alternative.** This alternative assumes that the proposed project changes to the Settlement Agreement restrictions would not occur and the stated restrictions and requirements of the Settlement Agreement would continue. Under this alternative, new LED field lights would be installed on the currently unlit Flanagan Field at Burton Park and the unlit Stadium Field at Highlands Park, as well as safety lighting, as necessary. The alternative also includes upgrading the existing metal-halide lighting at Madsen Field at Burton Park and Highlands Field at Highlands Park with LED lights.

C. SUMMARY TABLE(S)

Information in Table II-1, Summary of Impacts and Mitigation Measures from the EIR, and Table II-2, Summary of Impacts and Mitigation Measures from the Initial Study, have been organized to correspond with environmental issues discussed in Chapter IV. The tables are arranged in four columns: (1) impacts; (2) level of significance prior to mitigation; (3) mitigation measures; and (4) level of significance after mitigation. Levels of significance are categorized as follows:

SU	Significant and Unavoidable
S	Significant
LTS	Less Than Significant

For a complete description of potential impacts and recommended mitigation measures, please refer to the specific topical discussions in Chapter IV.

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
A. VISUAL RESOURCES			
There are no impacts related to visual resources.			
B. TRANSPORTATION AND CIRCULATION			
TRA-1: During the weekday PM peak period, the addition of project-generated traffic in the Near-Term Condition would result in a significant impact at the intersection of Cedar Street/Brittan Avenue. All other study intersections would continue operating at acceptable levels of service with project-generated traffic.	S	TRA-1: To achieve acceptable intersection operation under Near-Term plus Project Conditions, the City shall implement one of the following measures: • Convert the Cedar Street/Brittan Avenue intersection from an all-way-stop controlled intersection to a traffic signal controlled intersection, or • Convert the Cedar Street/Brittan Avenue intersection from an all-way-stop controlled intersection to a mini-roundabout.	LTS
TRA-2: During the weekday PM peak period under Cumulative Plus Project Conditions, the addition of project-generated traffic would result in a significant impact at the intersection of Cedar Street/Brittan Avenue. The project's incremental effect would be cumulatively considerable.	S	TRA-2: Implement Mitigation Measure TRA-1.	LTS
TRA-3: The addition of project-generated vehicular traffic would increase the potential for conflicts with pedestrians crossing streets or parking lots to access the parks which would be a significant impact.	S	TRA-3: The City shall implement the following pedestrian improvements to reduce the impact to a less-than-significant level: • At Burton Park, the City shall construct pedestrian sidewalks and crosswalks along Baytree Road between Chestnut Street and Woodland Avenue. • At Highlands Park, the City shall enhance pedestrian crossing opportunities along Aberdeen Drive to include a crosswalk (with curb ramps) at the north side of the intersection of Glasgow Lane. The City shall install a new curb ramp on the west side of Aberdeen Drive across from the existing curb ramp at the northeast corner at Glasgow Lane. Additionally, the City shall initiate a program to prohibit on-street parking adjacent to existing driveways along Aberdeen Drive to improve driver sight lines and enhance safety in the areas nearest each driveway.	LTS

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
C. NOISE AND VIBRATION			
NOI-1: Noise from construction activities at the Burton Park project site would result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	S	NOI-1: The project contractor shall implement the following measures during construction of the project: • Equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards. • Place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the active project site. • Locate equipment staging in areas that would create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the active project site during all project construction. • Ensure that all general construction related activities are restricted to 8:00 a.m. and 6:00 p.m. Monday through Friday, and between 9:00 a.m. and 5:00 p.m. on Saturdays and Sundays. No construction shall be permitted on certain holidays. • Designate a "disturbance coordinator" at the City of San Carlos who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler) and would determine and implement reasonable measures warranted to correct the problem.	LTS

Source: LSA, 2017.

Table II-2: Summary of Impacts and Mitigation Measures from the Initial Study

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
I. AESTHETICS			
Impacts to associated with aesthetics and visual resources are analyzed in the Draft EIR.			
II. AGRICULTURAL RESOURCES			
There are no impacts related to agricultural resources.			
III. AIR QUALITY			
The proposed project may violate air quality standards or contribute substantially to an existing or projected air quality violation.	S	AIR-1: Consistent with the Basic Construction Mitigation Measures required by the BAAQMD, the following actions shall be incorporated into construction contracts and specifications for the project: • 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 tracked-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. • A publicly visible sign shall be posted with the telephone number and person to contact at the City of San Carlos regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.	LTS

Table II-2: Summary of Impacts and Mitigation Measures from the Initial Study

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
IV. BIOLOGICAL RESOURCES			
There are no impacts related to biological resources.			
V. CULTURAL RESOURCES			
There are no impacts related to cultural resources.			
VI. GEOLOGY AND SOILS			
There are no impacts related to geology and soils.			
VII. GREENHOUSE GAS EMISSIONS			
There are no impacts related to greenhouse gas emissions.			
VIII. HAZARDS AND HAZARDOUS MATERIALS			
There are no impacts related to hazards and hazardous materials.			
IX. HYDROLOGY AND WATER QUALITY			
There are no impacts related to hydrology and water quality.			
X. LAND USE AND LAND USE PLANNING			
There are no impacts related to land use and land use planning.			
XI. MINERAL RESOURCES			
There are no impacts related to mineral resources.			
XII. NOISE			
Impacts associated with noise are analyzed in the Draft EIR.			
XIII. POPULATION AND HOUSING			
There are no impacts related to population and housing.			
XIV. PUBLIC SERVICES			
There are no impacts related to public services.			
XV. RECREATION			
There are no impacts related to recreation.			
XVI. TRANSPORTATION AND TRAFFIC			
Impacts to transportation and traffic are analyzed in the Draft EIR.			
XVII. TRIBAL CULTURAL RESOURCES			
There are no impacts related to tribal cultural resources.			
XVIII. UTILITIES AND SERVICE SYSTEMS			
There are no impacts related to utilities and service systems.			

Source: LSA, 2017.

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III. PROJECT DESCRIPTION

This chapter describes the proposed Burton and Highlands Parks Project (project) that is evaluated in this Draft Environmental Impact Report (Draft EIR). In addition to a description of the proposed project itself, the following includes a detailed description of the proposed project's regional and local context, planning process and background, and objectives, as well as a discussion of the intended uses of the EIR and required project approvals. The purpose of the proposed project is to install new field lighting on currently unlit fields and safety lighting, as needed, at Burton and Highlands Parks and to upgrade the existing lighting at the parks with light-emitting diode (LED) lights. In addition, the project also involves changes in use of the fields at Highlands Park to make field use consistent with the rules governing all other City fields. Changes in use would alter some of the operational restrictions within the 2010 Settlement Agreement[1] between the City of San Carlos and Save San Carlos Parks (SSCP) regarding the use of Highlands Park, consistent with the procedure in that Agreement for making such changes. The Settlement Agreement also identified, and the proposed project modifies, traffic facilities, signage, parking restrictions and limitations on the use of the field for practice and games. A copy of the Settlement Agreement is included in Appendix C. This EIR considers and evaluates the potential impacts associated with installation of the new lights, upgrades to existing lights, and revisions to restrictions within the 2010 Settlement Agreement.

A. PROJECT SITES

Burton and Highlands Parks are located in the City of San Carlos in San Mateo County on the San Francisco Peninsula. The City is primarily residential in character and is bordered by Belmont to the north, Redwood City to the south, Redwood City and the San Francisco Bay to the east, and unincorporated areas to the west. Regional vehicular access to the two sites is provided by US Highway 101 (US 101) and Interstate 280 (I-280). Figure III-1 depicts the regional and local context of the two sites.

The following describes the geographic context of the two project sites (Burton Park and Highlands Parks) evaluated in this EIR and provides a brief overview of existing land uses within and around the sites.

1. Burton Park

Burton Park is located at 900 Chestnut Street in the City of San Carlos. The site is generally level and is bounded by Woodland Avenue and Chestnut Street to the north, Brittan Avenue to the east, Arroyo Avenue to the west, and Cedar Street to the southwest. The site is also surrounded by residential uses. Figure III-2 depicts an aerial view of the Burton Park site. The two fields that are the subject of this EIR at Burton Park are Madsen Field (with night lighting) and Flanagan Field (without night lighting).

[1] San Carlos, City of, 2010. Settlement Agreement. September 14.

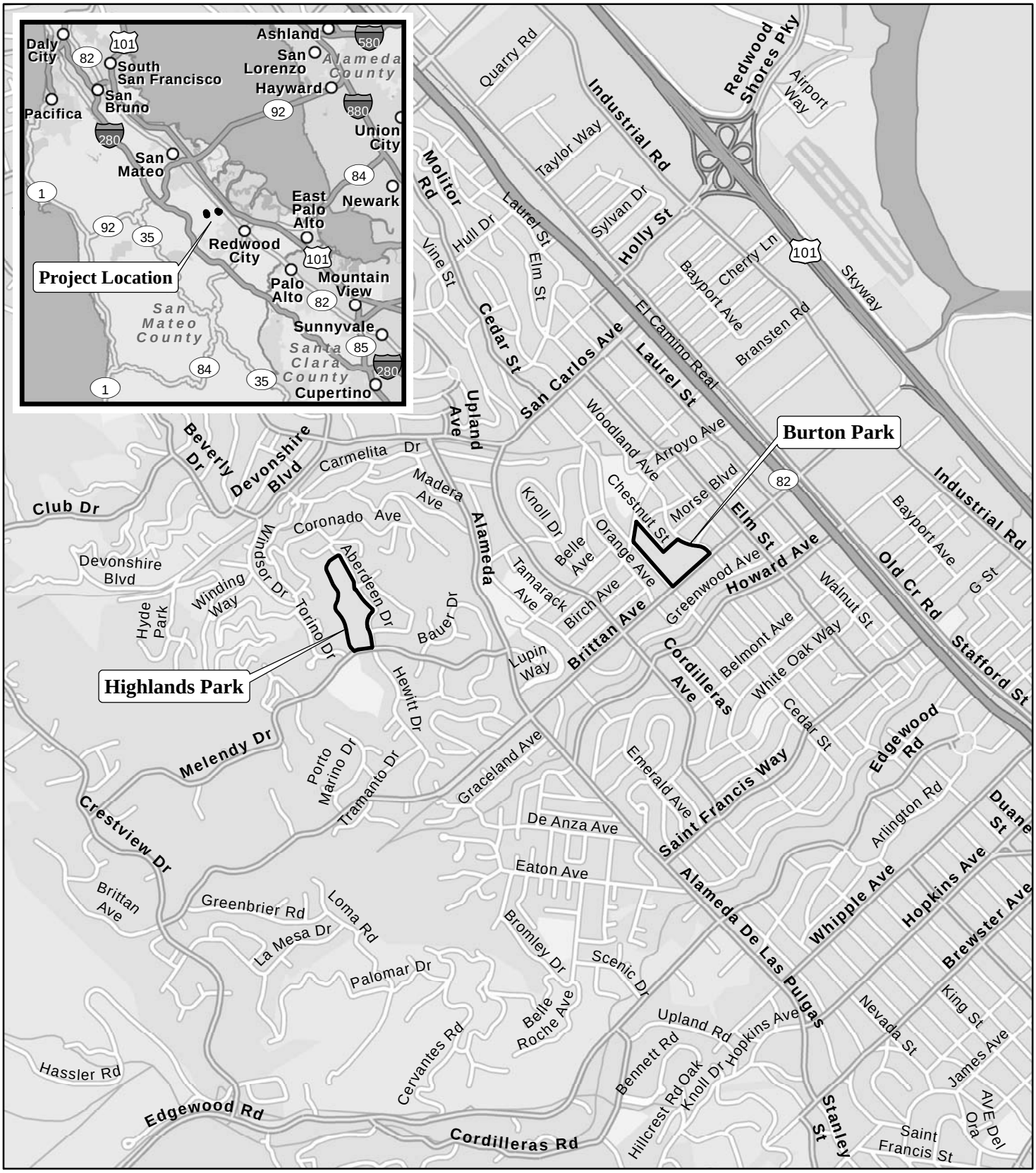

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FIGURE 1

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0 1000 2000
FEET

SOURCE: ESRI StreetMap North America (2012).

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Burton/Highlands Parks Lighting Project
Project Location and Regional Vicinity Map

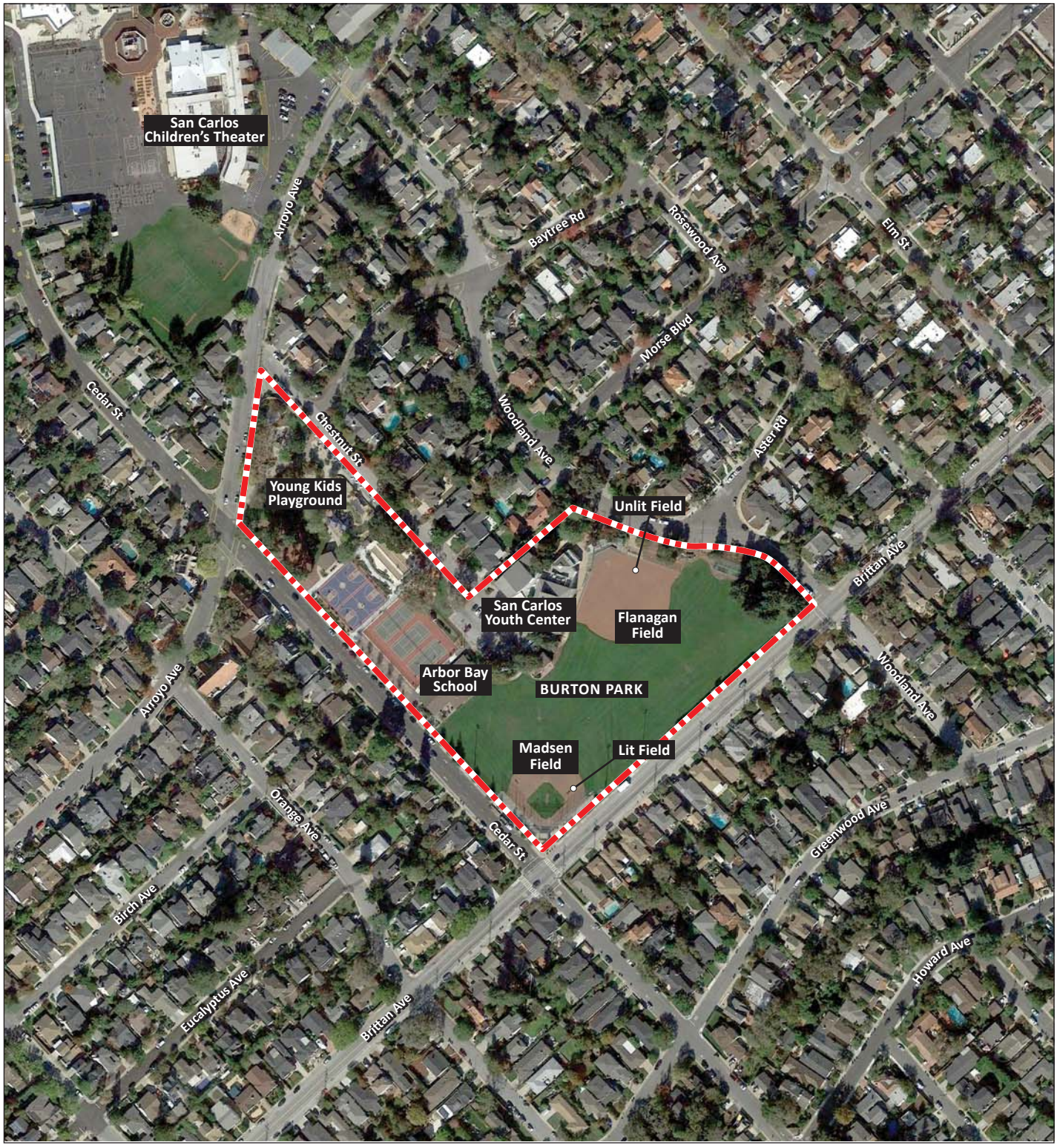

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FIGURE 2

SOURCES: GOOGLE EARTH; 11/2/16; LSA, 2017.

I:\CNH1601 Burton Highlands Parks Lighting\figures\Fig_2.ai (5/9/17)

Burton/Highlands Parks Lighting Project
Aerial Photograph of Burton Park

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a. Existing Facilities. Burton Park is 10.33 acres in size and contains amenities including baseball fields, basketball courts, horseshoe pits, picnic tables, BBQ, play equipment, community center, restrooms, soccer field, tennis courts, and bocce ball courts. Currently, Madsen Field on the west side of the park has a nighttime lighting system that utilizes metal halide lighting for field users. Flanagan Field on the east side of the park does not currently have lighting. Low level safety lighting is installed throughout the park.

b. Current Schedule. Flanagan Field is used year-round for events including soccer practices and games, youth softball practices and games, adult softball and camp uses during the summer. The field generally closes around 6:30 p.m. during the summer and 5:00 p.m. during the rest of the year. Soccer practices and games utilize the field in the spring and the fall while youth softball utilizes the field from February to August. Table III-1 identifies the existing schedule of use of Flanagan Field.

c. Parking and Circulation. Access to Burton Park is from a number of different roadways including Brittan Avenue, Arroyo Avenue, Woodland Avenue, Cedar Street and Chestnut Street. Burton Park has a small parking lot at the end of Chestnut Street for park users. In addition, street parking is available along Brittan Avenue, Cedar Street, and Woodland Avenue. A small parking lot is located at the north end of the park on Chestnut Drive and contains a total of 35 parking spaces, including four accessible parking spaces, and a passenger loading zone. Street parking is also available along Cedar Street, Brittan Avenue, and Woodland Avenue.

d. Land Use Designations. Burton Park is currently zoned as Park on the City's Zoning Map, is designated as Park in the General Plan, and is identified as a Community Park in the Master Plan for Parks, Open Space, and Other Recreational Facilities.

2. Highlands Park

Highlands Park is located at 206 Aberdeen Drive in the City of San Carlos. The park is surrounded by residential uses and is bounded by Aberdeen Drive to the east and Melendy Drive to the south. Figure III-3 depicts an aerial view of Highlands Park.

a. Existing Facilities. Highlands Park contains a variety of recreational facilities including three baseball/softball fields, two soccer fields, six sets of bleachers, a batting cage, five tennis courts, a walking path, a snack bar/storage building, bathroom building, children's play area, and open space areas on the western side. The play area is currently being improved with new play equipment, seating areas, pathways, and a restroom, and construction should be finished in the winter of 2017. The two athletic fields are separated by the children's play area with Stadium Field being located north of the play area and Highlands Field (also known as Lower Field)[2] located south of it. Stadium Field is a grass field and is currently unlit. Highlands Field is a synthetic turf field and is lit by a metal halide night lighting system. Low level safety lighting is installed throughout the park, but not in the immediate vicinity of Stadium Field.

[2] Highlands Field consists of Rotary Field in the north and Kiwanis Field in the south. Please note that throughout this document both fields are referred to as Highlands Field.

b. Current Schedule. As noted above, Stadium Field at Highlands Park does not currently have night lighting. The field is used year-round for soccer practices and games, baseball practices and games, baseball tournaments, and summer camps. Soccer practices are held in the spring and fall while baseball practices and games are held during the spring and summer. In July, baseball tournaments are also held on the field. The field is currently used beginning at 8:00 a.m. at the earliest on weekends, until approximately 8:00 p.m. during the spring and summer months. Table III-2 identifies the existing schedule of uses at Stadium Field.

Highlands Field is currently lit and hosts a variety of events ranging from soccer practices and games; baseball practices, games, and tournaments; adult softball; youth softball practices, games, and tournaments; and summer camps. The field is utilized beginning at 8:00 a.m. at the earliest until 10:00 p.m. at the latest. Soccer practices and games occur on weekdays in the spring and fall. Baseball practices and games occur during the spring.

c. Parking and Circulation. Access to Highlands Park is from Aberdeen Drive. Highlands Park has two parking lots with a combined total of 96 parking spaces. Parking is also generally unrestricted and available on surrounding streets.

d. Land Use Designations. Highlands Park is currently zoned as Park on the City's Zoning Map, is designated as Park in the General Plan, and is identified as a Community Park in the Master Plan for Parks, Open Space, and Other Recreational Facilities.

B. PROJECT BACKGROUND

The City has documented that there is an insufficient number of fields to meet current demand, and that each year the Parks & Recreation Department sees an increase in field time requests from both traditional sports (e.g., soccer, baseball and softball) and non-traditional sports (e.g., lacrosse, field hockey and Pop Warner football teams). The City follows the Field Use Policy (included in Appendix C) in regards to scheduling the use of fields. City staff notes that non-profit youth sport organizations based in San Carlos are allowed to make requests seasonally 3 months prior to the requested time. The City then identifies and allocates field use as determined by the priority levels defined in the Field Use Policy. The City's Field Use Policy prioritizes the following groups in order from highest priority to lowest priority: 1) City Parks and Recreation Department and San Carlos School District programs; 2) returning San Carlos youth, non-profit organizations with 90 percent or greater overall organization residency and not less than 80 percent residency per team; 3) youth or adult, San Carlos based non-profit sport group with at least 66 percent residency; 4) youth resident sports team, with at least 66 percent residency; 5) youth or adult resident private rentals; and 6) youth or adult non-resident private rentals.

LSA

FIGURE 3

N

Project Site

0 150 300

FEET

Burton/Highlands Parks Lighting Project

Aerial Photograph of Highlands Park

SOURCES: GOOGLE EARTH; 11/2/16; LSA, 2017.

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Table III-1: Existing and Proposed Field Use at Burton Park (Flanagan Field[a])

	Existing Use of Flanagan Field at Burton Park																	Proposed Use of Flanagan Field at Burton Park																
	Number of Days Per Month Events Occur																	Number of Days Per Month Events Occur																
Type of Use or Event [b]	J	F	M	A	M	J	J	A	S	O	N	D	Total # of Days Per Year Events Occur	Days of the Week Events Occur	Time of Daily Use	Events with Lighting	Apx. # of Participants Per Event [c]	Apx. # of Spectators Per Event	J	F	M	A	M	J	J	A	S	O	N	D	Total # of Days Per Year Events Occur	Days of the Week Uses Occur	Time of Daily Use	Events with Lighting	Total New # of Participants [d]	Total New # of Spectators [e]
Soccer Practices and Games (weekday)								22	22	22	22		88	Mon-Fri	Weekday – 3:30-6:30	NA	24	10								22	22	22	22		88	Mon-Fri	Weekday – 3:30-10:00	1 or 2 practices or games/day	24-48	20-40
Soccer Practices and Games (weekend)				6	6			8	8	8	8		44	Sat-Sun	Weekend – 9:00-5:00	NA	24	20				12	12			8	8	8	8		56	Sat-Sun	Weekend – 9:00-8:00	1 or 2 practices or games/day	24-48	20-40
Soccer Tournament (weekend)								4					4	Sat-Sun	8:00-5:00	NA	24	20								4					4	Sat-Sun	8:00-8:00	2 game/day	48	40
Youth Softball Practices and Games (weekday)		22	22	22	22	15	15	15					133	Mon-Fri	Weekday – 3:30-6:30	NA	24	10		22	22	22	22	15	15	15					165	Mon-Fri	Weekday – 3:30-10:00	1 or 2 practices or games/day	24-48	20-40
Youth Softball Practices and Games (weekend)		8	8	8	8								32	Sat-Sun	Weekend – 9:00-5:00	NA	24	10		8	8	8	8								32	Sat-Sun	Weekend – 9:00-8:00	1 or 2 practices or games/day	24-48	20-40
Youth Softball Tournament (weekend)					2								2	Sat-Sun	8:00-5:00	NA	30	20					2								2	Sat-Sun	8:00-8:00	1 to 2 games/night	60-120	40-80
Adult Softball (weekday)													-	-	-	NA	25	7				10	10	10	10	4					44	Mon, Wed & Fri	6:00-10:00	3 games/night	75	21
Camp Uses (weekday)						10	20	15					45	Mon-Fri	10:00-4:00	NA	45	0						10	20	15					45	Mon-Fri	10:00-4:00	0	0	0
TOTAL																																			279-411	181-301

[a] Flanagan Field does not currently have night lighting.
[b] An event is a practice for one team or a game between two teams.
[c] Participants/day includes students, coaches, and staff. Tournament/invitational participant estimates also include all visiting students, coaches, and staff.
[d] Total new participants equals the approximate number of participants per event multiplied by the number of new events with lighting.
[e] Total new spectators equals the approximate number of spectators per event multiplied by the number of new events with lighting.

Source: Newby, Amy, Parks & Recreation Director. Muela, Tyler. Recreation Supervisor. City of San Carlos Parks & Recreation Department. 2017. July.

Table III-2: Existing and Proposed Field Use at Highlands Park (Stadium Field [a,b])

	Existing Use of Stadium Field at Highlands Park																	Proposed Use of Stadium Field at Highlands Park																
	Number of Days Per Month Events Occur												Total # of Days Per Year Events Occur	Days of the Week Events Occur	Time of Daily Use	Events with Lighting	Apx. # of Participants Per Event [d]	Apx. # of Spectators Per Event	Number of Days Per Month Uses Occur												Total # of Days Per Year Events Occur	Days of the Week Uses Occur	Time of Daily Use	Events with Lighting	Total New # of Participants [e]	Total New # of Spectators [f]
Type of Use or Event [c]	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**							**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**						
Soccer Practices and Games (weekday)			20	20	20	10		22	22	22	22		170	Mon-Fri	Weekday – 3:30-5:00	NA	24	10			20	20	20	10		22	22	22	22		170	Mon-Fri	Weekday – 3:30-10:00	3 practices or games/ night	72	30
Soccer Practices and Games (weekend)			4	4	4	2		8	8	8	8		46	Sat-Sun	Weekend – 9:00-5:00	NA	24	20			4	4	4	2		8	8	8	8		46	Sat-Sun	Weekend – 9:00a-10:00p	2 games	48	40
Soccer Tournament (weekend)								4					4	Sat-Sun	8:00-5:00	NA	24	25-40								4					4	Sat-Sun	8:00a-10:00p	2 games/ night	48	50-80
Baseball Practices and Games (weekday)			22	22	22	22	16	8					112	Mon-Fri	Weekday – 3:30-5:00	NA	25	15			22	22	22	22	16	8					112	Mon-Fri	Weekday – 3:30-9:00	1 to 2 practices or games/ night	25-50	15-30
Baseball Practices and Games (weekend)			8	8	8	8	4	2					38	Sat-Sun	Weekend – 9:00-5:00	NA	25	25			8	8	8	8	4	2					38	Sat-Sun	Weekend – 9:00-9:00	1 to 2 games/ night	25-50	25-50
Baseball Tournament (weekday)							6						6	Mon-Fri	Weekday – 3:30-8:00	NA	50	25-40							6						6	Mon-Fri	Weekday – 3:30-8:00	1 game/ night	50	25-40
Baseball Tournament (weekend)							2						2	Sat-Sun	Weekend – 9:00-5:00	NA	50	25-40							2						2	Sat-Sun	Weekend – 9:00-5:00	1 game/ night	50	25-40
Camp Uses (weekday)						10	20	15					45	Mon-Fri	10:00-4:00	NA	45	0						10	20	15					45	Mon-Fri	10:00-4:00	0	0	0
TOTAL																																			318-368	210-310

[a] Stadium Field at Highlands Park does not currently have night lighting.
[b] Stadium Field is a large field and in the spring, baseball practices/games and soccer practices/games can overlap. In the fall, multiple soccer practices/games, up to 4 maximum, can take place at one time.
[c] An event is a practice for one team or a game between two teams.
[d] Participants/day includes students, coaches, and staff. Tournament/invitational participant estimates also include all visiting students, coaches, and staff.
[e] Total new participants equals the approximate number of participants per event multiplied by the number of new events with lighting.
[f] Total new spectators equals the approximate number of spectators per event multiplied by the number of new events with lighting.

Source: Newby, Amy, Parks & Recreation Director. Muela, Tyler. Recreation Supervisor. City of San Carlos Parks & Recreation Department. 2017. July.

The City maintains a shareable google doc that lays out the schedule for that season for each field.[3] Any other organization not meeting the criteria described above must submit a form indicating the desired field use and the City considers that request based on field availability. This type of request is considered after all non-profit youth sport organizations have the field space they need. An hourly rate is charged per field and insurance also is required.

The City currently has over 18,000 hours of annual permitted use on the seven primary athletic fields in San Carlos, and over 8,000 organized sport participants use San Carlos fields every year.[4] The City commissioned two reports that evaluated fields and facilities. The City considers the results and recommendations of the following reports still valid for 2017 conditions:

- Parks and Sports Fields Field Use and Agronomic Specifications report, prepared by Mark Mahady & Associates in 2001[5] that evaluated the current use, impact of each sport on the fields, best practices for maintaining quality playing fields, and provided recommendations for projected future demand. The current 2017 field use has increased 40 percent over the demand for field use that was calculated in the Mahady report. This report is available to view at the San Carlos Parks & Recreation Department.
- The City of San Carlos Master Plan for Parks, Open Space, Buildings and other Recreational Facilities,[6] completed in 2008, included an inventory of existing parks and facilities and provided recommendations for future park planning. This report is available to view at the San Carlos Parks & Recreation Department.

The City does not currently have and is unlikely to purchase in the future, available suitable land on which to build new fields, and therefore continues to look for ways to increase the use of existing fields. The Mahady report recommended converting natural turf sports fields to artificial turf to improve the wear tolerance of existing sports fields, and that has been done at Highlands Field. The reader should note that the project evaluated in this Draft EIR and as defined by the City of San Carlos as Lead Agency, does not include the conversion of Flanagan, Madsen or Stadium Fields to artificial turf.

The Master Plan noted the recommendation of the Mahady Report regarding artificial turf, and also recommended the addition of night lighting to unlit fields to provide for an increased number of hours of play per year to maximize the utility of existing fields. The proposed project (providing new lights at Flanagan Field and Stadium Field and upgrading existing lights at Madsen Field and Highlands Field to improve field conditions and reduce energy use and light spillover and glare) evaluated in this Draft EIR addresses the Master Plan recommendation to provide night lighting at unlit fields.

[3] Newby, Amy, 2017. Director of San Carlos Parks & Recreation Department. 2017. Personal communication with LSA. July 26.

[4] Newby, Amy, 2017. Director of San Carlos Parks & Recreation Department. Personal communication with LSA. May 25.

[5] Mark Mahady & Associates, 2001. *Parks and Sports Fields Field Use and Agronomic Specifications.*

[6] Harris Design Landscape Architecture, 2008. *City of San Carlos Master Plan for Parks, Open Space, Buildings and other Recreational Facilities.* Prepared for the City of San Carlos. August.

In addition to the proposed lighting improvements at the Highlands Park fields, changes in use of fields at Highlands Park are part of the proposed project evaluated in this EIR. The use of fields at Highlands Park is currently restricted per the terms of the Settlement Agreement, described below. All other fields in the City comply with the City's Field Use Policy and Municipal Code Section 12.12.050 which states that all park facilities, except for open space parks, shall be closed to the public between the hours of 10:00 p.m. and 6:00 a.m. Section 12.12.060 states that when an activity concludes at or near 10:00 p.m., participants and/or spectators shall be allowed until 10:30 p.m. to depart from the park facility.

On April 13, 2009, the San Carlos City Council adopted a Mitigated Negative Declaration[7] (2009 MND) and approved a design services agreement to convert the lower athletic field (Highlands Field) of Highlands Park from natural grass to synthetic turf. On May 13, 2009, Save San Carlos Parks (SSCP) filed a lawsuit challenging the City's adoption of the 2009 MND for the conversion of Highlands Field from natural grass to synthetic turf under CEQA. In 2010, the City of San Carlos entered into a Settlement Agreement (included in Appendix C of this EIR) with SSCP to settle the litigation. The Settlement Agreement included a number of requirements regarding parking restrictions, signage, physical traffic improvements, and limitations on the use of the fields. The Settlement Agreement also provided (in Section 11) that after a noticed public hearing (with notice to SSCP) and based on additional needed CEQA review, the City retained jurisdiction to alter traffic and operational restrictions in the Settlement Agreement, and identify a "new or modified project" to be considered by the City Council. The proposed project includes the identification of the "modified project," as described more fully below, and this EIR provides the environmental review under CEQA that is necessary to evaluate those project changes. Note that the City Council would essentially be approving a replacement project at Highlands Park as allowed by the Settlement Agreement.

The Mahady report also provided recommendations in regards to field surface management and maintenance as the City's natural turf fields at times receive excessive use and the existing schedule of use leaves little time during spring and summer (the growing season) for renovation. The Parks & Recreation Department has an active and dedicated field maintenance program. The field maintenance program includes mowing, edging, weed control, pruning and infield maintenance two times per week at each field. Annual, routine field closures are essential in keeping up the integrity of the fields, allowing the City to provide quality and safe fields for San Carlos youth to play on. The following tasks are performed during the annual four- to six-week field closures: aerating, fertilizing, top seeding, irrigation/repairs/modifications, infield material added and fencing/closure to allow seed to germinate. The City will continue to manage and maintain all fields including those at Burton and Highlands Parks to the best of their ability and ongoing field maintenance to address current and future use of the fields is considered part of the existing background conditions relative to the proposed project.

C. PROJECT OBJECTIVES

The primary objectives of the proposed project are stated below:

[7] San Carlos, City of, 2009. *City of San Carlos Highlands Park Lower Athletic Field Conversion to a Synthetic Surface Project. Draft Initial Study/Mitigated Negative Declaration*. February.

- Allow for additional hours of play at Burton Park on Flanagan Field and Highlands Park on Stadium Field and Highlands Field to assist in meeting the unmet demand for field space.
- Provide improved LED lighting systems at Madsen Field at Burton Park and Highlands Field at Highlands Park to improve field playing conditions and reduce energy use and existing levels of light spillover and glare.
- Improve safety and increase nighttime use of Flanagan Field at Burton Park and Stadium Field at Highlands Park by installing new LED lighting.
- Provide opportunities to maximize the use of Burton and Highlands Parks to help meet the existing unmet community demand for field space.
- Ensure that City parks and fields are managed consistently per the Field Use Policy and general City practices for all fields.

D. PROPOSED PROJECT

This section provides a description of the proposed project. The proposed project is intended to provide additional and improved field lighting at fields at Burton and Highlands Parks to allow for additional hours of play and assist in meeting the unmet demand for field space. The proposed project would replace existing metal halide lighting at the two parks with LED lighting. In addition to the installation of new lighting and replacement of existing lighting, the proposed project evaluated in this EIR would allow changes in operations, parking restrictions, traffic facilities, and signage at Highlands Park to differ from certain restrictions and requirements identified in the 2010 Settlement Agreement.

1. Burton Park

The proposed project involves the replacement of existing lighting at Madsen Field and installation of new lighting on Flanagan Field at Burton Park.

a. Madsen Field. Replacement lighting at Madsen Field would utilize the existing light poles and replace the existing metal halide light fixtures with new LED light fixtures. Madsen Field currently contains a total of five light poles that range in height from 60 feet to 80 feet. Three light poles are located along the first base line and two light poles are located along the third base line. The construction of the existing poles is galvanized steel. The proposed replacement light fixtures and cut-off visors are made of powder-coated aluminum. The light cut-off visors are designed to reduce light spillover and glare to the surrounding neighborhood to the greatest degree possible.

The five existing poles at Madsen Field would hold a total of 30 new LED light fixtures and four up-light LED light fixtures for a total of 35 luminaires or light fixtures. The new LED lighting system would have a total connected load of 34.5 kW. Each of the light fixtures at Madsen Field would be equipped with lights ranging from 2.30 kW maximum at the two poles behind home plate, noted as A1 and A2 on Figure III-4, and at the pole in the outfield (C2) to 5.75 kW maximum at the poles in the outfield along the first base and third base lines (B1 and B2). While most of the fixtures would be pointed down at the field, the new lighting would also contain fixtures mounted at heights of 25 feet on some poles that point up towards the sky. The purpose of these fixtures is to allow players on the field to safely see balls that reach higher than 50 feet in height. Figure III-4 shows the field

illumination summary and equipment list for the proposed improvements to the existing lighting system at Madsen Field.

With the improved lighting, no changes to the schedule or estimated number of participants are proposed or expected for Madsen Field.

b. Flanagan Field. New lighting at Flanagan Field would include the placement of a total of six new light poles. Two poles would be placed along the first base line, two poles would be placed along the third base line, and two poles would be placed at the edge of the outfield. The light poles will range in height from 70 feet to 80 feet. The new poles will be constructed of galvanized steel and mounted on 10 to 20 square foot concrete bases. Minor excavation would be required to construct the foundations for each pole and underground trenching would be required to install electrical connections.

The six new poles at Flanagan Field would hold a total of 43 new LED light fixtures including two up-light LED light fixtures. The new LED lighting system would have a total connected load of 49.45 kW. The two new poles on northern end of the field, noted as A3 and A4 on Figure III-5, would each hold five light fixtures; all of which would be directed at the Flanagan Field softball diamond. The two new poles located along the first base line and third base line, noted as B3 and B4, would each hold eight light fixtures. Pole B4 would be pointed at both baseball diamonds and both soccer fields in the park. Pole B3 would be pointed towards the Flanagan Field softball diamond and the eastern soccer field. The two new poles (C3 and C4) located in the outfield would contain five light fixtures each and would light up the Flanagan Field softball diamond and the eastern soccer field.

The proposed LED light fixtures, and cut-off visor are made of powder coated aluminum. The visors would reduce light spillover and glare to the surrounding neighborhood to the greatest extent possible. All light fixtures at Flanagan Field would be equipped with lights ranging from 4.60 kW maximum at the two poles closest to home plate (A3 and A4) and in the outfield near Brittan Avenue (C3 and C4), to 8.05 kW at the poles along the first base and third base lines (B3 and B4). Flanagan Field would also include light fixtures that are pointed towards the sky for high fly balls to ensure safe playing conditions for field users. Figure III-5 shows the field illumination summary and equipment list for the proposed new lighting at Flanagan Field.

Per the information in Table III-1, the proposed project would involve a change in use of Flanagan Field on weekdays from events currently ending by 6:30 p.m. to events ending at 10:00 p.m. for soccer and softball games and practices. On weekends, soccer and softball practices and games that currently end by 5:00 p.m. would end at 8:00 p.m. Additionally and for all uses on an annual basis, the approximate number of participants is expected to increase from a maximum of 220 to a maximum of 411 (a difference of 191 participants), and the approximate number of spectators is expected to increase from a maximum of 97 to a maximum of 301 (a difference of 204 spectators). For additional information on the proposed uses and expected increase in participants at Flanagan Field, please see Table III-1. Sufficient safety lighting is currently installed at Burton Park such that additional safety lighting is not needed as part of the project.

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	60'	-	25'	TLC-LED-1150	1	1	0
				60'	TLC-LED-1150	2	2	0
2	B1-B2	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	5	5	0
1	B4	80'	-	25'	TLC-LED-1150	1	0	1
				80'	TLC-LED-1150	7	3	4
1	C1	70'	-	70'	TLC-LED-1150	5	5	0
1	C2	70'	-	70'	TLC-LED-1150	4	4	0
7	TOTALS					35	30	5

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

GRID SUMMARY

Name:	**Baseball 1**
Size:	260'/260'/260' - basepath 70'
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Infield	Outfield
Scan Average:	**41.9**	**31.2**
Maximum:	58	46
Minimum:	30	20
Avg / Min:	1.38	1.57
Max / Min:	**1.90**	**2.31**
UG (adjacent pts):	1.46	1.50
CU:	0.61	
No. of Points:	25	135

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	121,000 lumens
No. of Luminaires:	**30**
Total Load:	34.5 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000

Reported per TM-21-11. See luminaire datasheet for details.

LSA

FIGURE 4

N

0 60 120

FEET

SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

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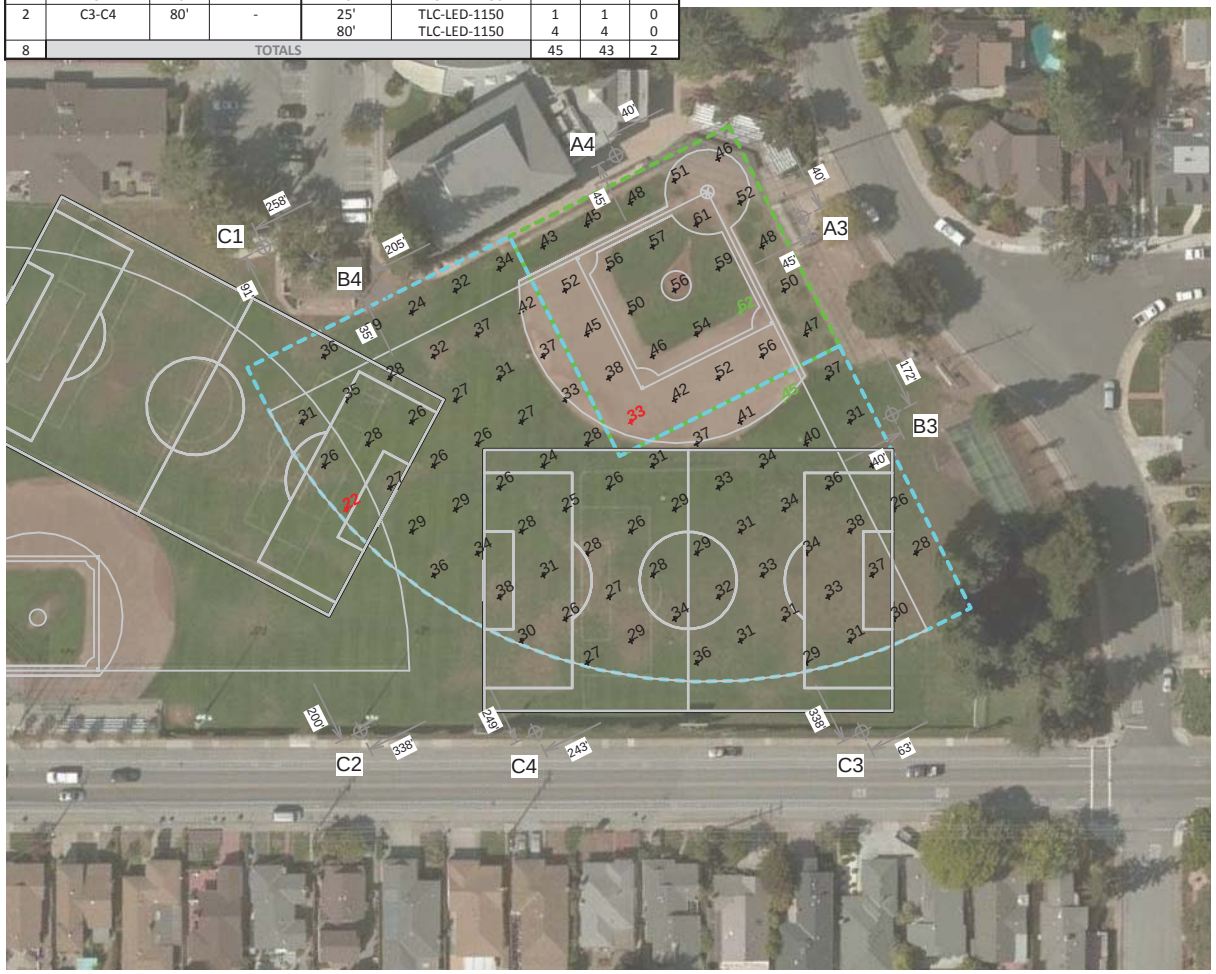
Burton/Highlands Parks Lighting Project

Illumination Summary of Proposed Lighting Improvements for Madsen Field, Burton Park

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A3-A4	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	4	4	0
2	B3-B4	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	7	7	0
1	C1	70'	-	70'	TLC-LED-1150	5	5	0
1	C2	70'	-	70'	TLC-LED-1150	4	2	2
2	C3-C4	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	4	4	0
8	TOTALS					45	43	2



GRID SUMMARY

Name:	**Baseball 2**
Size:	300'/300'/300' - basepath 90'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Infield	Outfield
Guaranteed Average:	**50**	**30**
Scan Average:	50.0	31.1
Maximum:	62	45
Minimum:	33	22
Avg / Min:	1.50	1.39
Guaranteed Max / Min:	**2**	**2.5**
Max / Min:	1.85	2.03
UG (adjacent pts):	1.26	1.43
CU:	0.63	
No. of Points:	25	73

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	121,000 lumens
No. of Luminaires:	**43**
Total Load:	49.45 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000

Reported per TM-21-11. See luminaire datasheet for details.

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

LSA

FIGURE 5

N

0 100 200

FEET

SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

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Burton/Highlands Parks Lighting Project

Illumination Summary of New Lighting for Flanagan Field, Burton Park

2. Highlands Park

The proposed project at Highlands Park involves the replacement of the existing metal halide sports lighting system with an LED lighting system, the installation of a new LED lighting system and safety lighting at Stadium Field and changes in use of both fields.

The project will also require approval by the City Council for project changes to the 2010 Settlement Agreement, and a revision to the Field Use Policy to remove the reference to Highlands Park on page 7 that states, "**Highlands Park**: Games are not to be scheduled prior to 8:00 a.m. for regular season games and 9:00 a.m. for tournaments/special events." As noted previously, the proposed project also involves changes in use of the fields at Highlands Park to make field use consistent with the rules governing all other City fields. Changes in use would differ from some of the terms of the Settlement Agreement (included in Appendix C) between the City of San Carlos and SSCP regarding the use of Highlands Park. The 2010 Settlement Agreement included a number of requirements that have since been constructed or are in place at Highlands Park. Requirements that are in place include signs restricting parking on the east side of Aberdeen Drive, signs notifying drivers of off-street parking lots, a speed hump installed on Aberdeen Drive, and a stop sign installed on Glasgow Lane. These requirements and improvements included in the 2010 Settlement Agreement would remain unchanged. However, the project evaluated in this EIR includes Project Changes to the Settlement Agreement Restrictions that will be considered by the City Council consistent with the Settlement Agreement requirements in order to effectively supersede that earlier project, as specified in Section 11:

> "the City retains jurisdiction to consider and approve a new and different project that could alter and supersede the Project as limited by this Agreement. Specifically, the City may take action to alter, amend, modify or otherwise change the traffic and operations restrictions contained in Section 2, Section 3, Section 4 or Section 5 of this Agreement to reflect the new or modified project at a noticed public hearing of the City Council, with notice provided to SSCP in accordance with Section 13, and after the completion of any environmental review under CEQA as may be necessary."

Specifically, the project proposes the following revisions to certain restrictions of the Settlement Agreement:

- **Passenger loading zone.** The project proposes to remove the signs and the passenger loading zone at the middle of Lot A for short-term drop-off and pick-up of field users.
- **Designated carpool spaces.** The project proposes removal of the requirement that four designated carpool spaces be provided in Lot A. These spaces would be available on a first come first served basis.
- **Provision of parking information to field users.** The project proposes to remove the provision that users of the tennis courts and Highlands Field use Lot A and users of Stadium Field use Lot B, as the City has determined that this provision is unenforceable.
- **Practice schedule.** The project proposes to remove the limitations established in the Settlement Agreement regarding Highlands Field, including the number of teams that can practice at once, the number of practices that can be scheduled to start and stop at the same time, and the time period of at least 15 minutes between the start of two practices and the start of two other practices. Removal of these restrictions would allow for additional usage at Highlands Field to address the growing demand for field space, citywide. The results of

this change at Highlands Field and the additional times of use and numbers of participants are shown in Table III-2.

- **Game Schedule.** The project proposes to remove the limitations on game schedules that were identified in the Settlement Agreement. As previously discussed, games are not currently allowed to begin prior to 8:00 a.m. and players may not use the field earlier than 15 minutes prior to their scheduled game if their game begins at 8:00 a.m., or no earlier than 45 minutes prior to their scheduled game if their game begins after 9:00 a.m. The proposed project would remove these limitations to allow all regularly scheduled youth sport weekend games to observe City Municipal Code and Field Use Policy requirements with regards to times that teams may begin play and times that teams must end play.
- **Limitations on use of the project field.** The project proposes to remove the limitations that state use of the fields are only for organized sports clubs and leagues based in the City, and the requirement that the fields not be rented to teams from outside the City. The proposed project would ensure that programming and scheduling of uses at Highlands Park is consistent with other parks and athletic fields in the community. Specifically, the proposed project would comply with the City's Field Use Policy which identifies use priorities for youth sports organizations and general community use and the City's method and process for scheduling all fields.

As explained above, the Settlement Agreement itself need not be amended to change these restrictions; rather, the City retained the option to alter these restrictions when it entered into the Settlement Agreement. However, for informational purposes and clarity, a draft of the Project Changes to the Settlement Agreement Restrictions that sets forth proposed changes (shown in underlined and ~~strikeout~~ text) to Sections 2, 3, 4 and 5 (and thus includes also the restrictions that would not be revised) is provided in Appendix C.

a. Highlands Field. Highlands Field is currently lit by metal halide lighting on 12 light poles. Due to their age, upgrades to the lighting system would require the replacement of the poles to support the new lighting technology. The proposed light poles would range from 60 feet in height to 80 feet in height. The new lighting system at Highlands Field would replace the existing metal halide lighting system with a new LED lighting system to ensure more even lighting on the field and reduce energy use and light spillover and glare on surrounding uses. The proposed new lighting system would consist of galvanized steel poles and powder-coated aluminum light fixtures and cut-off visors and mounted on 10 to 20 foot concrete bases. The visors would reduce light spillover and glare to the surrounding area to the greatest extent possible.

A total of 12 replacement light poles would be installed at Highlands Field. The replacement light poles at Highlands Field would be aimed at the south baseball diamond (Kiwanis Field), north baseball diamond (Rotary Field), and soccer field. As shown in Figure III-6a, a total of six light poles with 31 light fixtures with a total load of 35.65 kW would illuminate the southern baseball diamond. Four light poles (including B1 and C1 associated with the southern diamond and C3 and B3 associated with the northern diamond) would illuminate the soccer field as shown on Figure III-6b. Five poles with a total of 28 light fixtures and a total load of 32.2 kW would be aimed at the north baseball diamond as shown on Figure III-6c. Lighting at Highlands Field would also include fixtures mounted at 25 feet in height that are pointed up towards the sky so that players on the field can safely see balls that reach higher than 50 feet in height. Figures 6a-6c show the field illumination summary and equipment list for the proposed lighting improvements at Highlands Field.

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	60'	-	60'	TLC-LED-1150	3	3	0
1	B1	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	6	6	0
2	B2, C2	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	4	4	0
1	C1	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	7	7	0
6	TOTALS					31	31	0

GRID SUMMARY

Name:	**Softball 1**
Size:	265'/265'/265' - basepath 60'
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Infield	Outfield
Guaranteed Average:	**50**	**30**
Scan Average:	50.70	34.17
Maximum:	61	47
Minimum:	38	24
Avg / Min:	1.33	1.45
Guaranteed Max / Min:	**2**	**2.5**
Max / Min:	1.61	2.01
UG (adjacent pts):	1.31	1.40
CU:	0.65	
No. of Points:	25	137

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	121,000 lumens
No. of Luminaires:	**31**
Total Load:	35.65 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000

Reported per TM-21-11. See luminaire datasheet for details.

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

FIGURE 6a

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SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

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Burton/Highlands Parks Lighting Project

Illumination Summary of Proposed Lighting Improvements for Highlands Field, Highlands Park

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A3-A4	60'	-	60'	TLC-LED-1150	3	3	0
1	B3	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	7	7	0
1	B4	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	4	4	0
1	C3	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	8	8	0
5	TOTALS					28	28	0

GRID SUMMARY

Name:	**Softball 2**
Size:	235'/235'/235' - basepath 60'
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Infield	Outfield
Guaranteed Average:	**50**	**30**
Scan Average:	51.76	35.28
Maximum:	62	53
Minimum:	39	24
Avg / Min:	1.32	1.48
Guaranteed Max / Min:	**2**	**2.5**
Max / Min:	1.57	2.24
UG (adjacent pts):	1.40	1.54
CU:	0.62	
No. of Points:	25	106

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	121,000 lumens
No. of Luminaires:	**28**
Total Load:	32.2 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000

Reported per TM-21-11. See luminaire datasheet for details.

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

FIGURE 6b

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SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

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Burton/Highlands Parks Lighting Project

Illumination Summary of Proposed Lighting Improvements for Highlands Field, Highlands Park

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	B1	80'	-	25'	TLC-LED-1150	1	0	1
				80'	TLC-LED-1150	6	6	0
2	B3, C1	80'	-	25'	TLC-LED-1150	1	0	1
				80'	TLC-LED-1150	7	7	0
1	C3	80'	-	25'	TLC-LED-1150	1	0	1
				80'	TLC-LED-1150	8	8	0
4	TOTALS					32	28	4

GRID SUMMARY

Name:	**Soccer 1**
Size:	330' x 210'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average:	**30**
Scan Average:	30.77
Maximum:	39
Minimum:	21
Avg / Min:	1.50
Guaranteed Max / Min:	**2.5**
Max / Min:	1.91
UG (adjacent pts):	1.47
CU:	0.70
No. of Points:	84

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	121,000 lumens
No. of Luminaires:	**28**
Total Load:	32.2 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000

Reported per TM-21-11. See luminaire datasheet for details.

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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FIGURE 6c

Burton/Highlands Parks Lighting Project

Illumination Summary of Proposed Lighting Improvements for Highlands Field, Highlands Park

SOURCE: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

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b. Stadium Field. New lighting at Stadium Field would include the placement of eight new light poles at the field. Each of the new poles would be 70 feet in height. One pole would be located along the first base line on the diamond, two poles would be placed along the third base line, one pole would be placed at the edge of right field, two poles would be placed on either side of the center field line of the soccer field, and two poles would be placed at the northern end of the soccer field. Minor excavation would be required to construct the 10 to 20 square foot concrete bases for each pole and underground trenching would be necessary to allow for electrical connections.

Two of the new poles at Stadium Field would be aimed at the baseball diamond while the other six poles would illuminate both the soccer field and baseball diamond. A total of 10 light fixtures with an average and maximum load of 8.26 kW would light up the baseball diamond exclusively and 25 light fixtures with an average and maximum load of 28.75 kW would light up both the soccer field and baseball diamond.

The proposed new lighting system would consist of galvanized steel poles and powder-coasted aluminum light fixtures and cut-off visors. The visors would reduce light spillover and glare to the surrounding neighborhood to the greatest extent possible. Light fixtures at Stadium Field would be equipped with LED lights ranging from 3.45 kW maximum at the poles on behind home plate (A5 and A6) and the poles at midfield (S2 and S4) to 6.90 kW maximum at the pole in the outfield (S3). Figures 7a and 7b identifies the equipment list and the field illumination summary for the proposed lighting improvements at Stadium Field.

Per the information on Table III-2, the proposed project would involve a change in use of Stadium Field on weekdays from events currently ending by 5:00 p.m. (for soccer and baseball practices and games) to events ending at 9:00 p.m. (baseball practices and games) or 10:00 p.m. (soccer practices and games). On weekends, soccer practices and games that currently end by 5:00 p.m. would end at 10:00 p.m. and baseball practices and games that currently end by 5:00 p.m. would end at 9:00 p.m. Other uses at the field include soccer tournaments and camp uses during the summer months which would not require field lighting. Additionally and for all uses, the approximate number of participants is expected to increase from a maximum of 242 to a maximum of 368 (a difference of 126 participants), and the approximate number of spectators is expected to increase from a maximum of 190 to a maximum of 310 (a difference of 120 spectators). For additional information on the proposed uses and expected increase in participants at Stadium Field, please see Table III-2.

Additionally low level safety lighting will need to be installed in the vicinity of Stadium Field to allow field users to leave the fields after the lights are turned off and access the parking areas. To address safety and security issues and light spillover concerns, the safety lighting shall be designed to include smart controls and shielding to achieve appropriate lighting levels, no off-site spillover or glare, and maximum energy savings. For pedestrian traffic, a design to achieve these goals could include a combination of lighting bollards and low level lighting poles (typically mounted at 12 feet in height) or a similar design.

E. USES OF THIS EIR

It is anticipated that this EIR will provide environmental review for all discretionary approvals (including demolition of the existing light poles at Highlands Field and building permits) necessary for the proposed project as described within this chapter. The project will also require approval by the City Council of the Project Changes to Settlement Agreement Restrictions (a draft is included in Appendix C). Upon approval of the project, the City would also revise the Field Use Policy to remove the reference to Highlands Park on page 7. The City of San Carlos will consider the information provided in the EIR, along with other information which may be presented, in deciding whether or not to certify the EIR and approve the proposed project. During final design and prior to construction of the improved and new park lighting systems, the City would need to coordinate with PG&E regarding the electrical use and power requirements.

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A5-A6	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	3	3	0
1	B5	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	5	5	0
2	S1, S5	70'	-	70'	TLC-LED-1150	4	4	0
2	S2, S4	70'	-	70'	TLC-LED-1150	3	3	0
1	S3	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	6	6	0
8	TOTALS					35	35	0

GRID SUMMARY

Name:	**Softball 3**
Size:	200'/200'/200' - basepath 60'
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Infield	Outfield
Guaranteed Average:	**50**	**30**
Scan Average:	50.78	30.73
Maximum:	61	50
Minimum:	36	21
Avg / Min:	1.40	1.45
Guaranteed Max / Min:	**2**	**2.5**
Max / Min:	1.68	2.36
UG (adjacent pts):	1.33	1.41
CU:	0.39	
No. of Points:	25	72

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	40,600 / 121,000 lumens
No. of Luminaires:	**35**
Total Load:	37.01 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000

Reported per TM-21-11. See luminaire datasheet for details.

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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FIGURE 7a

Burton/Highlands Parks Lighting Project

Illumination Summary of New Lighting for Stadium Field, Highlands Park

SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	B5	70'	-	25'	TLC-LED-1150	1	0	1
				70'	TLC-LED-1150	5	5	0
2	S1, S5	70'	-	70'	TLC-LED-1150	4	4	0
2	S2, S4	70'	-	70'	TLC-LED-1150	3	3	0
1	S3	70'	-	25'	TLC-LED-1150	1	0	1
				70'	TLC-LED-1150	6	6	0
6	TOTALS					27	25	2

GRID SUMMARY

Name:	**Soccer 2**
Size:	300' x 200'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average:	**30**
Scan Average:	31.46
Maximum:	38
Minimum:	24
Avg / Min:	1.32
Guaranteed Max / Min:	**2.5**
Max / Min:	1.60
UG (adjacent pts):	1.39
CU:	0.71
No. of Points:	70

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	121,000 lumens
No. of Luminaires:	**25**
Total Load:	28.75 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000

Reported per TM-21-11. See luminaire datasheet for details.

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

FIGURE 7b

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SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

Burton/Highlands Parks Lighting Project

Illumination Summary of New Lighting for Stadium Field, Highlands Park

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IV. SETTING, IMPACTS AND MITIGATION MEASURES

This chapter contains an analysis of each potentially significant environmental issue topic that has been identified for the Burton and Highlands Parks Project (proposed project). The environmental setting of the project as it relates to each specific environmental topic evaluated in the EIR and the impacts that are expected to result from implementation of the proposed project are discussed in each section of this chapter. Mitigation measures are proposed to reduce potential impacts, where appropriate.

THRESHOLDS/CRITERIA OF SIGNIFICANCE

Under CEQA, a significant effect is defined as a substantial, or potentially substantial, adverse change in the environment.[1] The CEQA Guidelines direct that this determination be based on scientific and factual data. Each impact evaluation in this chapter is prefaced by criteria of significance, which are the thresholds for determining whether an impact is significant. These criteria of significance are based on the CEQA Guidelines, Appendix G.

ENVIRONMENTAL TOPICS INCLUDED IN THE EIR

The following environmental topics are addressed in this chapter:

A. Visual Resources

B. Transportation and Circulation

C. Noise

Based on analysis contained in an Initial Study (included in Appendix B), the City has determined that the proposed project would not result in significant impacts to the following environmental topics after application of the proposed mitigation measures: agricultural and forestry resources; air quality; biological resources; cultural resources; geology and soils; greenhouse gas emissions; hazards and hazardous materials; hydrology and water quality; land use and planning; mineral resources; population and housing; public services; recreation; tribal cultural resources; and utilities and service systems. Consequently, these issues are not examined in this chapter of the EIR, but are briefly summarized in Chapter VI, Other CEQA Considerations, under Effects Found Not to Be Significant.

[1] CEQA Guidelines Section 21068.

CUMULATIVE ANALYSIS CONTEXT

A discussion of cumulative impacts is discussed in each section of this Draft EIR. CEQA defines cumulative impacts as "two or more individual effects, which, when considered together, are considerable, or which can compound or increase other environmental impacts." Section 15130 of the CEQA Guidelines requires that an EIR evaluate potential environmental impacts that are individually limited but cumulatively significant. These impacts can result from the proposed project alone, or together with other projects. The CEQA Guidelines state: "The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects." Cumulative impacts can result from individually minor but collectively significant projects taking place over time.[2]

The methodology used for assessing cumulative impacts typically varies depending on the specific topic being analyzed. For example, the geographic and temporal (time-related) parameters related to a cumulative analysis of air quality impacts are not necessarily the same as those for a cumulative analysis of noise impacts. This is because the geographic area that relates to air quality is much larger and regional in character than the geographic area that could be affected by potential noise impacts from a proposed project and other cumulative projects/growth. The cumulative noise impacts are more localized than air quality and transportation impacts, which are more regional in nature. Accordingly, the parameters of the respective cumulative analyses in this document are determined by the degree to which impacts from this project are likely to occur in combination with other projects.

FORMAT OF ISSUE SECTIONS

Each environmental topical section comprises two primary parts: (1) setting, and (2) impacts and mitigation measures. An overview of the general organization and the information provided in the two parts is provided below:

- **Setting**. The setting section for each environmental topic generally provides a description of the applicable physical setting (e.g., existing visual character, existing traffic conditions) for the project sites and their surroundings, at the beginning of the environmental review process. An overview of regulatory considerations that are applicable to each specific environmental topic is also provided.
- **Impacts and Mitigation Measures**. The impacts and mitigation measures section for each environmental topic presents a discussion of the impacts that could result from implementation of the proposed project. The section begins with the criteria of significance, which establish the thresholds to determine whether an impact is significant. The latter part of this section presents the impacts from the proposed project and mitigation measures, as appropriate. The impacts of the proposed project are organized into separate categories based on their significance according to the criteria listed in each topical section: less-than-significant impacts (which do not require mitigation measures) and significant impacts (which do require mitigation measures).

[2] CEQA Guidelines Section 15355.

Impacts are numbered and shown in bold type, and the corresponding mitigation measures are numbered and indented. Impacts and mitigation measures are numbered consecutively within each topical analysis and begin with an acronymic or abbreviated reference to the impact section (e.g., AES). The following symbols are used for individual topics:

VIS	Visual Resources
TRA	Transportation and Circulation
NOI	Noise

Impacts are also categorized by type of impact, as follows: Less-Than-Significant, Significant, and Significant and Unavoidable. The following notations are provided after each identified significant impact and after identification of mitigation measures:

LTS	Less Than Significant
S	Significant
SU	Significant and Unavoidable

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A. VISUAL RESOURCES

This section evaluates the effects of the proposed project on visual resources and public views within and in the vicinity of the project sites. The analysis considers the visual quality of the project sites, and views to and from the project sites and evaluates the effects and extended hours of use associated with the installation of new field lighting at Flanagan Field in Burton Park and Stadium Field in Highlands Parks, the upgrading of existing lighting with LED lights at Madsen Field in Burton Park and Highlands Field at Highlands Park. This analysis also takes into consideration the extended time of field use at Highlands Park associated with the proposed project changes to the Settlement Agreement restrictions, described in Chapter III, Project Description. This section is based on field surveys of the project sites and a review of project plans and illumination summaries. Please refer to Appendix D for a full set of the illumination summaries for each field. The illumination summaries are also available for review in the project file during regular business hours at 600 Elm Street, San Carlos, California 94070.

1. Setting

The following section describes the visual character of the project sites and surroundings as well as views from and in the vicinity of the sites. For a detailed description of the physical characteristics of the project sites, refer to Chapter III, Project Description.

a. Existing Visual Character of the Project Sites and Surrounding Area. The proposed project includes installation of new lighting and the upgrading of existing lighting at two fields at Burton Park and two fields at Highlands Park in the City of San Carlos. The following discussion describes the existing visual character of the two parks and surrounding areas. Figure IV.A-1 shows the locations of the existing views depicted in Figures IV.A-2a through IV.A-2d at Burton Park. Figure IV.A-3 shows the locations of existing viewpoints for Highlands Park depicted in Figures IV.A-4a through IV.A-4d.

(1) Burton Park. Burton Park is located in an urban and built-out area in the City of San Carlos and is bounded by Chestnut Street and Woodland Avenue to the north, Brittan Avenue to the east, and Cedar Street to the west. The approximately 10.33-acre park is relatively flat and contains typical features found at a community park including baseball fields, basketball courts, horseshoe pits, picnic tables, BBQ, play equipment, community center, restrooms, soccer field, tennis courts, and bocce ball courts.

The northern portion of Burton Park contains the play area, bocce ball courts, and tennis courts. This area contains lighting for the three tennis courts as well as safety lighting along the pathway between the basketball courts and play area. The southern portion of the Burton Park includes the two athletic fields referred to as Madsen Field and Flanagan Field that are used for baseball, softball, and soccer. A chain link fence encloses a large portion of the park, including Madsen Field and Flanagan Field. Currently, Madsen Field on the west side of the park has a metal halide night lighting system supported by poles that range in height from 60 feet to 70 feet.

The visual character of the area surrounding Burton Park is comprised of single-family homes that range in height from one to two stories. However, due to Burton Park's relatively flat topography, surrounding residential development, and existing vegetation, views of Madsen Field and Flanagan Field at Burton Park are limited to the immediate area surrounding the park. The existing light poles

and fixtures at Madsen Field are visible from residences immediately surrounding the park (See Viewpoints 1 and 2 in Figure IV.A-2a). However, due to the existing trees and vegetation surrounding Burton Park, views of the existing fields are partially obscured from the adjacent area as seen in Viewpoints 3 and 4 in Figure IV.A-2b, Viewpoints 5 and 6 in Figure IV.A-2c, and Viewpoints 7 and 8 in Figure IV.A-2d.

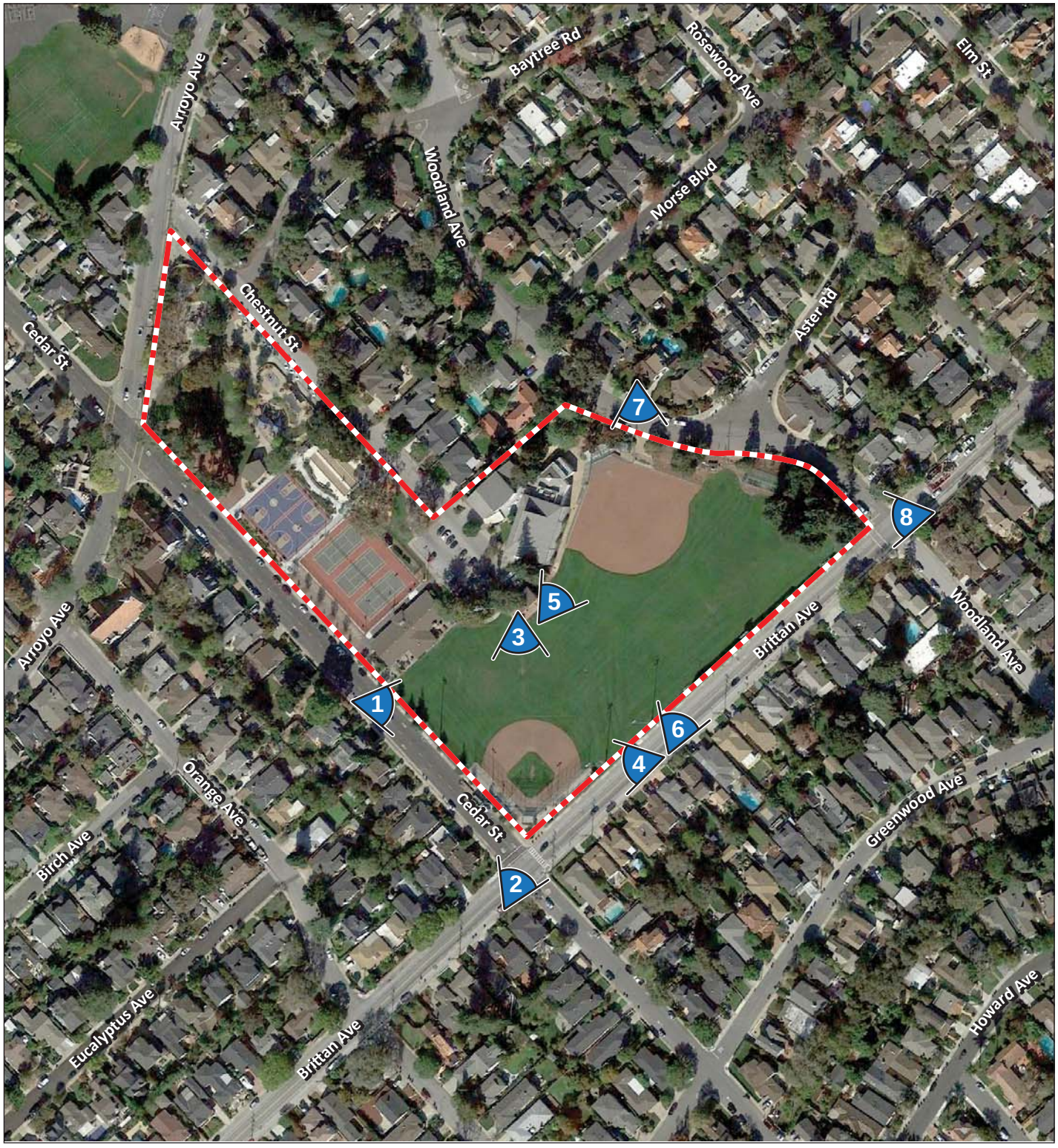
(2) Highlands Park. Highlands Park is located in an urban and built-out area in the City of San Carlos, between Highway 82 and I-280. Highlands Park is bounded by Aberdeen Drive to the east and Melendy Drive to the south and is entirely surrounded by residential uses. Highlands Park contains a variety of recreational facilities including three baseball/softball fields, two soccer fields, six sets of bleachers, a batting cage, five tennis courts, a walking path, a snack bar/storage building, bathroom building, children's play area, and open space areas on the western side.

Highlands Park contains two athletic fields. Stadium Field is located at the north end of the park is a grass field that is currently unlit. Highlands Field is located at the south end of the park and is a synthetic turf field and contains a metal halide night lighting system supported by poles that range in height from 50 feet to 70 feet.

The visual character of the area surrounding Highlands Park is suburban and the surrounding physical environment is characterized by single-family homes that range in height from one to two stories. The existing light poles and fixtures at Highlands Field are visible from Glasgow Lane, Melendy Drive and Aberdeen Drive as well as from residences immediately adjacent to the park. Viewpoint 1 in Figure IV.A-4a shows that views of Highlands Field are visible from Aberdeen Drive. Viewpoint 2 in Figure IV.A-4a and Viewpoints 3 and 4 in Figure IV.A-4b show that existing trees around the park partially obscure views of the existing lighting fixtures and the effects of existing light spillover and glare.

As seen in Viewpoints 5 and 6 in Figure IV.A-4c and Viewpoints 7 and 8 in Figure IV.A-4d, existing views of Stadium Field are also partially obscured by existing trees.

b. Existing Light and Glare at the Project Sites. On-site and off-site sources contribute to existing light or illumination at the two project sites. Madsen Field at Burton Park and Highlands Field at Highlands Park currently contains nighttime lighting to illuminate the fields for baseball, softball, and soccer practices and games throughout the year (see Tables III-1 and III-2 in the Project Description). At Burton Park, the Madsen Field lighting is the primary source of light and glare in the area and at Highlands Park, the Highlands Field existing lighting is the primary source of light and glare in the vicinity of that park. In addition to the existing lighting systems at both parks, the existing sources of nighttime lighting within the vicinity of the project sites are typical of urbanized areas, and include lighting sources such as street lights on power poles, lights in the parking areas and at other areas in the parks, building lights, and vehicle headlamps. Both parks also contain lighted tennis courts that contribute to light and glare. Replacement of lights at the tennis courts is not included in the proposed project. Daytime sources of glare in the vicinity of the project sites include reflections off of light-colored surfaces, windows, and metal objects such as nearby vehicles.



LSA

FIGURE IV.A-1

N

0 150 300

FEET

3 Photo Viewpoint Location

Project Site

Burton/Highlands Parks Project EIR

Burton Park Photo Viewpoint Map

SOURCES: GOOGLE EARTH; 11/2/16; LSA, 2017.

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVA1.ai (7/14/17)

Photo 1: View of Madsen Field looking southeast from Cedar Street

Photo 2: View of Madsen Field looking north from the Brittan Avenue and Cedar Street intersection

LSA

FIGURE IV.A-2a

Burton/Highlands Parks Project EIR
Views of Burton Park from Surrounding Viewpoints

SOURCE: LSA, JUNE 2017.

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVA2a-IVA2d.ai (7/14/17)

Photo 3: View of Madsen Field looking south from the San Carlos Youth Center

Photo 4: View of Madsen Field looking northwest from Brittan Avenue

LSA

FIGURE IV.A-2b

Burton/Highlands Parks Project EIR
Views of Burton Park from Surrounding Viewpoints

SOURCE: LSA, JUNE 2017.

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVA2a-IVA2d.ai (7/14/17)

Photo 5: View of Flanagan Field looking east from the San Carlos Youth Center

Photo 6: View of Flanagan Field looking north from Brittan Avenue

LSA

FIGURE IV.A-2c

Burton/Highlands Parks Project EIR
Views of Burton Park from Surrounding Viewpoints

SOURCE: LSA, JUNE 2017.

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVA2a-IVA2d.ai (7/14/17)

Photo 7: View of Flanagan Field looking south from Woodland Avenue

Photo 8: View of Flanagan Field looking northwest from Brittan Avenue

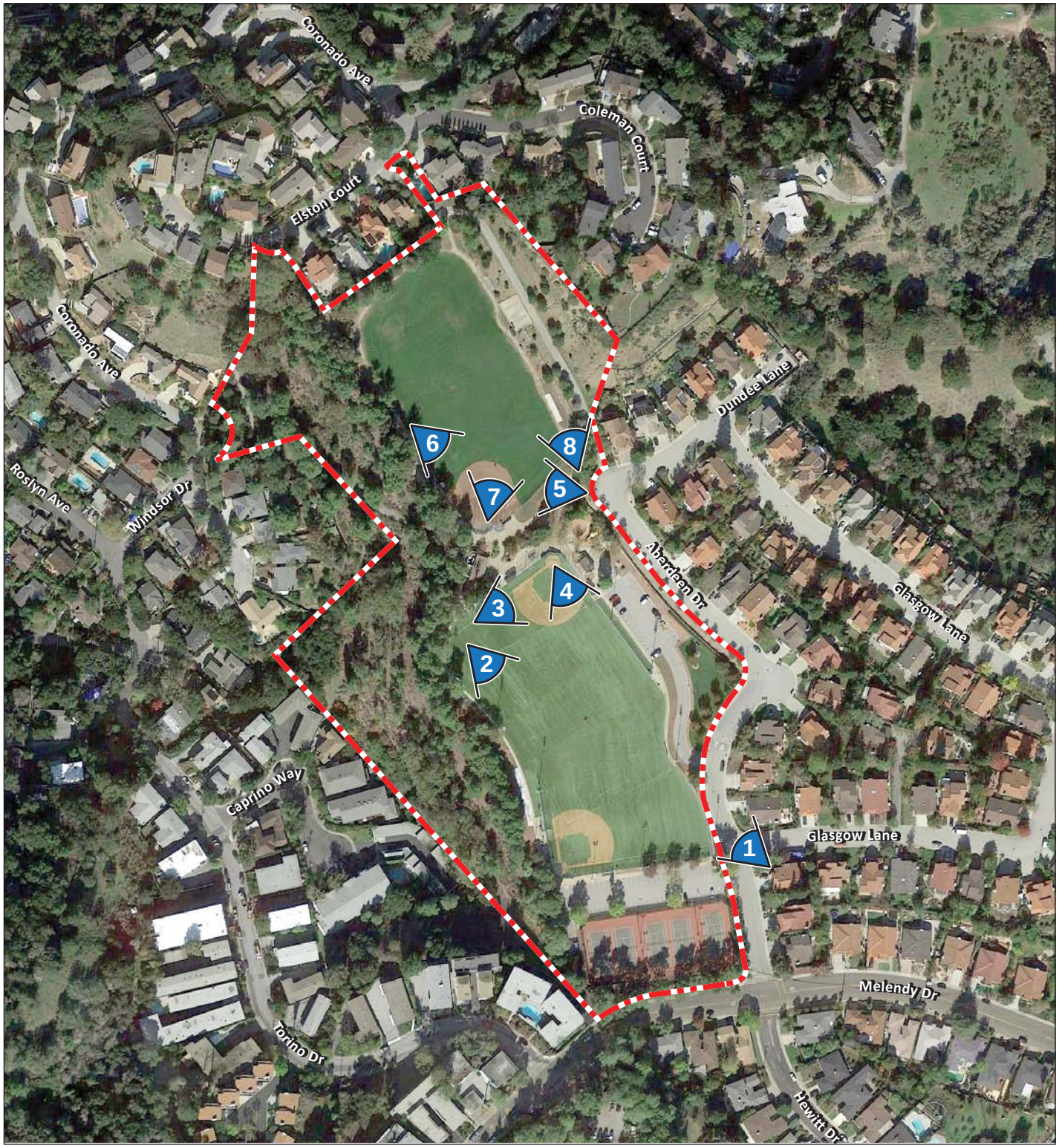
LSA

FIGURE IV.A-2d

Burton/Highlands Parks Project EIR
Views of Burton Park from Surrounding Viewpoints

SOURCE: LSA, JUNE 2017.

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVA2a-IVA2d.ai (7/14/17)



LSA

FIGURE IV.A-3

N

0 150 300

FEET

3 Photo Viewpoint Location

Project Site

Burton/Highlands Parks Project EIR
Highlands Park Photo Viewpoint Map

SOURCES: GOOGLE EARTH; 11/2/16; LSA, 2017.

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVA3.ai (7/14/17)

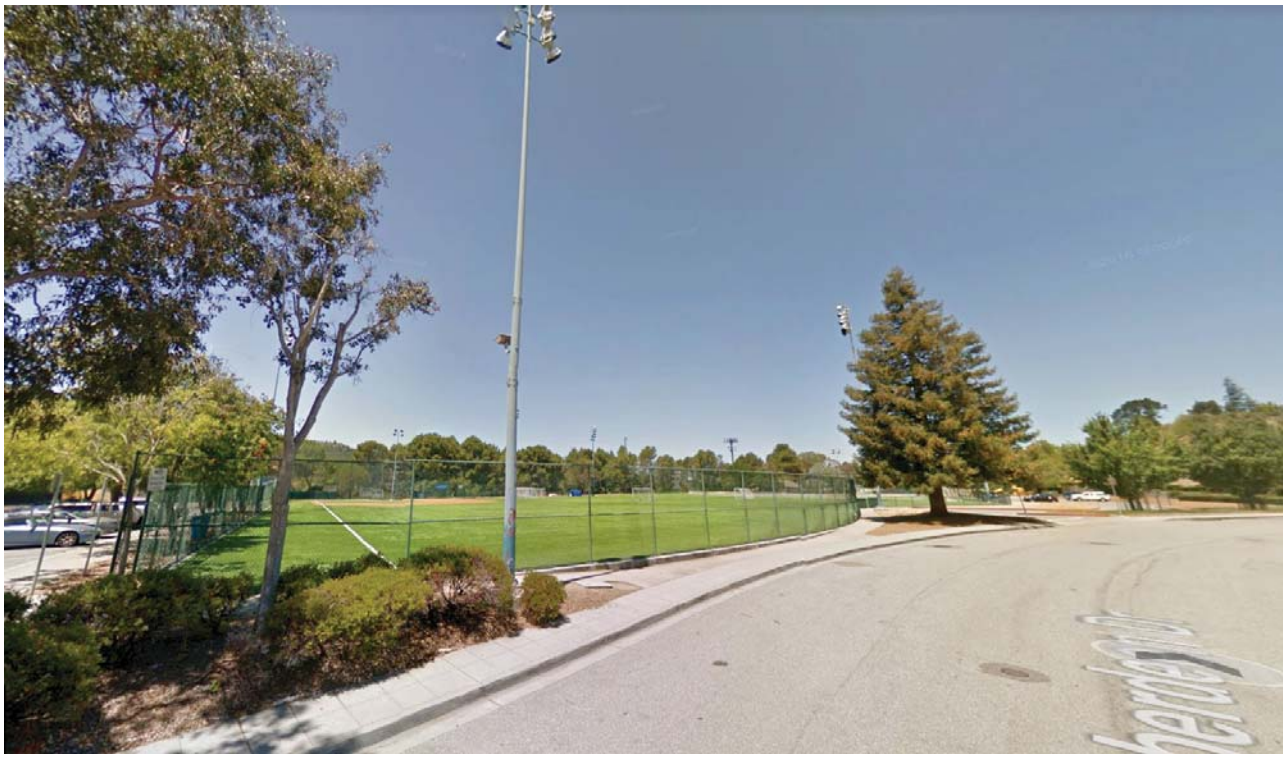


Photo 1: View of Highlands Field looking northwest from Glasgow Lane and Aberdeen Drive intersection

Photo 2: View of Highlands Field looking southwest from northern side of field

LSA

FIGURE IV.A-4a

Burton/Highlands Parks Project EIR
Views of Highlands Park from Surrounding Viewpoints

SOURCE: LSA, JUNE 2017.

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVA4a-IVA4d.ai (7/14/17)

Photo 3: View of Highlands Field looking east from northern side of field

Photo 4: View of Highlands Field looking south from northern side of field

LSA

FIGURE IV.A-4b

Burton/Highlands Parks Project EIR
Views of Highlands Park from Surrounding Viewpoints

SOURCE: LSA, JUNE 2017.

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVA4a-IVA4d.ai (7/14/17)

Photo 5: View of Stadium Field looking northwest from south side of field, near play area

Photo 6: View of Stadium Field looking southeast

LSA

FIGURE IV.A-4c

Burton/Highlands Parks Project EIR
Views of Highlands Park from Surrounding Viewpoints

SOURCE: LSA, JUNE 2017.

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVA4a-IVA4d.ai (10/19/17)

Photo 7: View from Stadium Field looking northeast from the baseball diamond infield

Photo 8: View from Stadium Field looking north from south side of field

LSA

FIGURE IV.A-4d

Burton/Highlands Parks Project EIR
Views of Highlands Park from Surrounding Viewpoints

SOURCE: LSA, JUNE 2017.

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVA4a-IVA4d.ai (7/14/17)

Light spillover is defined as light that is received outside the boundaries of the area on which the lighting system is installed and can cause negative human health impacts ranging from obesity, depression, sleep disorders, diabetes, and cancer.[1] Light spillover is measured on both the vertical plane (e.g., light shining through a window onto a wall) and the horizontal plane (e.g., light falling on a kitchen counter) in terms of footcandles.[2] For the proposed project, light spillover impacts were analyzed by quantifying the light spillover at the nearest residential property lines to the fields. The light spillover modeling and values were measured by Musco Lighting and Arum Engineers and can be found in Appendix D. Examples of commonly experienced light levels in other settings are shown below:

- Full moonlit night: approximately 0.01 footcandle
- Typical neighborhood streetlight: 1 to 5 footcandles
- Main road intersection street lighting: 2.5 to 3 footcandles
- Residential lighting at night: 7 to 10 footcandles
- Dusk: approximately 10 footcandles
- Gas station canopies: 25 to 30 footcandles

As previously discussed, both project sites are located in developed areas of the City of San Carlos and adjacent to streets and single-family homes. At both parks, the fields are partially separated from the residences by trees, vegetation, fences, and or streets. Existing sources of nighttime lighting within the vicinity of the project sites are typical of urbanized areas. The City of San Carlos does not have specific environmental thresholds for spillover light levels. However, the Illuminating Engineering Society of North America (IESNA) Lighting Handbook[3] suggests standards for acceptable light spillover levels depending on the character of the surrounding area.

The IESNA handbook ranks geographic areas by the amount and intensity of existing light sources, ranging from most sensitive areas designated as E1 (i.e., National Parks) to least sensitive areas designated as E4 (i.e., urban areas).[4] Areas that are rural in character (e.g. do not have street lights) and exhibit few existing sources of light, are more susceptible to impacts resulting from the installation of new lighting sources. Urbanized areas have a large number of existing light sources and are therefore less susceptible to adverse effects associated with new lighting sources. The proposed project sites would be categorized in the E3 zone, which are identified as areas of medium ambient brightness such as urban residential zones. The IESNA-recommended light spillover

[1] International Dark-Sky Association, 2017. Human Health. Website: www.darksky.org/light-pollution/human-health (accessed July 18, 2017).

[2] A footcandle is a common unit of measurement used to calculate adequate lighting levels of workspaces in buildings or outdoor space. It is used to describe the light level that a lamp is expected to provide over the long-term. A horizontal footcandle is the amount of light striking a horizontal plane and a vertical footcandle is the amount of light striking a vertical plane.

[3] Illuminating Engineering Society. 2011. *The Lighting Handbook, 10th Edition*. Illuminating Engineering Society.

[4] Lighting Research Center, 2017. "What are lighting environmental zones?" Website: www.lrc.rpi.edu/programs/nlpip/lightinganswers/lightpollution/environmentalZones.asp (accessed July 18, 2017).

standard is 0.8 footcandles during pre-curfew hours (prior to 10:00 p.m.) and 0.2 footcandles during post-curfew hours (after 10:00 p.m.).

Glare refers to the discomfort or impairment of vision caused by excessive and uncontrolled brightness.[5] The intensity of glare ranges from the worst case of "disability glare" where visibility is lost to "discomfort glare" where the light is uncomfortable. The illumination study contained in Appendix D contains estimates of the amount of existing discomfort glare associated with the existing lights to which properties surrounding the project sites would be subjected when facing the brightest light source from any direction, measured in candelas.[6] The degree of discomfort associated with glare decreases the further that a viewer is located from a light source, due to the dispersion of light across distance.

The following analysis assumes that light intensities, or candela levels, at surrounding properties would result in the following levels of glare:

- Minimal to no glare: 500 candelas or less
- Significant glare: 25,000 to 75,000 candelas
- Maximum glare that should only occur on or very near the lit area where the light source is in direct view: 150,000 candelas or more

In addition, the International Commission on Illumination (CIE) identifies levels of candelas from outdoor lighting. Similar to the light spill thresholds established by IESNA, the CIE has established limits on candelas from outdoor lighting installation based on "environmental zones" from E0 to E4. In the E3 zone, which applies to the proposed project, glare intensity should not exceed 10,000 candelas during pre-curfew hours or 1,000 candelas during post-curfew hours.[7] The City of San Carlos has no established standards related to glare.

Burton Park. Burton Park currently has a nighttime lighting system that utilizes metal halide lighting for field users at Madsen Field. As shown in Figures IV.A-5 and IV.A-6, existing light spillover affecting the residences surrounding the park is primarily located along Brittan Avenue and Cedar Street.[8] The existing lighting system generates a maximum of 1.65 horizontal footcandles on Cedar Street (the green number on Figure IV.A-5) and a maximum of 3.41 vertical footcandles (the green number on Figure IV.A-6) on Cedar Street. In addition, there are numerous points along Cedar and Brittan Avenue that exceed the 0.8 footcandles.

[5] Lighting Research Center, 2017. "What is glare?" Website: www.lrc.rpi.edu/programs/nlpip/lightinganswers/lightpollution/glare.asp (accessed July 18, 2017).

[6] A candela is the System of Units (SI) unit of luminous intensity that measures luminous intensity from a light source in a given direction. Because glare is associated with high light intensity, candelas serve as a measurement of glare levels. Higher candela levels represent higher glare levels.

[7] Institution of Lighting Professionals, 2011. Guidance notes for the reduction of obtrusive light.

[8] Existing light spillover and glare at Burton Park was calculated by Martin Perez of Aurum Engineers and Musco Lighting utilizing the previous design for lighting at Madsen Field and running it through Musco's in-house design program. This calculation accounted for pole heights, fixture counts, fixture aiming, photometry, fixture configurations, and lumen output to model accurate existing light spillover and glare levels at the park.

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	60'	-	60'	LV-8 1500W MZ 4	2	2	0
				60'	FUTURE	3	3	0
				60'	LV-8 1500W MZ 5	1	1	0
1	B1	70'	-	70'	LV-8 1500W MZ 4	5	5	0
				70'	FUTURE	3	3	0
				70'	LV-8 1500W MZ 5	1	1	0
1	B2	70'	-	70'	FUTURE	3	3	0
				70'	LV-8 1500W MZ 4	6	6	0
1	C1	70'	-	70'	FUTURE	1	1	0
				70'	LV-8 1500W MZ 3D	3	3	0
				70'	LV-8 1500W MZ 4	5	5	0
1	C2	70'	-	70'	LV-8 1500W MZ 4	1	1	0
				70'	FUTURE	1	1	0
				70'	LV-8 1500W MZ 3D	2	2	0
				70'	LV-8 1500W MZ 5	1	1	0
6	TOTALS					44	44	0

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

GRID SUMMARY

Name:	**Property Line Spill**
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**0.289**
Maximum:	1.65
Minimum:	0.01
No. of Points:	85

LUMINAIRE INFORMATION

Color / CRI:	1500W MZ / XXXX
Luminaire Output:	155,000 / 155,000 lumens
Average LLF:	0.800
No. of Luminaires:	**30**
Total Load:	48.0 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
LV-8	--	--	--
FUTURE	--	--	--

Reported per TM-21-11. See luminaire datasheet for details.

LSA

FIGURE IV.A-5

N

0 150 300

FEET

SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

Burton/Highlands Parks Project EIR

Burton Park Existing Light Spillover, Horizontal Footcandles

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVA5.ai (7/13/17)

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	60'	-	60'	LV-8 1500W MZ 4	2	2	0
				60'	FUTURE	3	3	0
				60'	LV-8 1500W MZ 5	1	1	0
1	B1	70'	-	70'	LV-8 1500W MZ 4	5	5	0
				70'	FUTURE	3	3	0
				70'	LV-8 1500W MZ 5	1	1	0
1	B2	70'	-	70'	FUTURE	3	3	0
				70'	LV-8 1500W MZ 4	6	6	0
1	C1	70'	-	70'	FUTURE	1	1	0
				70'	LV-8 1500W MZ 3D	3	3	0
				70'	LV-8 1500W MZ 4	5	5	0
1	C2	70'	-	70'	LV-8 1500W MZ 4	1	1	0
				70'	FUTURE	1	1	0
				70'	LV-8 1500W MZ 3D	2	2	0
				70'	LV-8 1500W MZ 5	1	1	0
6	TOTALS					44	44	0

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

GRID SUMMARY

Name:	**Property Line Spill**
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED MAX VERTICAL FOOTCANDLES

	Entire Grid
Scan Average:	**0.817**
Maximum:	3.41
Minimum:	0.07
No. of Points:	85

LUMINAIRE INFORMATION

Color / CRI:	1500W MZ / XXXX
Luminaire Output:	155,000 / 155,000 lumens
Average LLF:	0.800
No. of Luminaires:	**30**
Total Load:	48.0 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
LV-8	--	--	--
FUTURE	--	--	--

Reported per TM-21-11. See luminaire datasheet for details.

LSA

FIGURE IV.A-6

N

0 150 300

FEET

SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

Burton/Highlands Parks Project EIR

Burton Park Existing Light Spillover, Vertical Footcandles

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVA6.ai (7/13/17)

Figure IV.A-7 depicts the existing glare levels at residential properties surrounding Burton Park. Similar to the existing light spillover, the primary glare is concentrated along Brittan Avenue and Cedar Street. The existing lighting system generates an average of 19,238 candelas and a maximum of 71,540 candelas (the green number) along Cedar Street, which exceeds the CIE threshold of 25,000 candelas.

Highlands Park. The proposed project at Highlands Park includes the replacement of the existing lighting poles and fixtures at Highlands Field, and the installation of new lighting at Stadium Field. The park currently has a nighttime lighting system at Highlands Field that utilizes metal halide lighting for field users. As shown in Figures IV.A-8 and IV.A-9, existing light spillover at Highlands Park is highest along the eastern boundary of the park. The existing lighting system generates a maximum of 3.74 horizontal footcandles (the green number) and a maximum of 9.76 vertical footcandles.[9]

As shown on Figure IV.A-10, the glare level measured in candelas is an average of 93,272 candelas and a maximum of 120,837 (the green number at pole location 1C3) that far exceeds the CIE threshold.

2. Regulatory Setting

The City of San Carlos Municipal Code; Master Plan for Parks, Open Space, Buildings and Other Recreational Facilities; Field Use and Agronomic Specifications Report; and Field Use Policy contain requirements related to visual resources. The Municipal Code Sections 12.12.050, 12.12.060, and 18.50.070.C do contain requirements to control the timing and extent (spillover) of outdoor lighting. However, in Section 18.15.070.C – Control of Outdoor Artificial Light, athletic field lights within a school campus or public or private park and security lighting are exempted from the requirements of that section. Additionally, Section 12.12.050 and 12.12.060 includes the following provision regarding hours of use of parks.

- **12.12.050 – Hours for use—Parks.** All park facilities shall be closed to the public between the hours of 10:00 p.m. and 6:00 a.m., except for open space park facilities, which shall be closed from thirty minutes after sundown to thirty minutes prior to sun rise. This section shall not apply to buildings located in park facilities where the hours of use shall be regulated by the Director. (Ord. 1332 § 2 (part), 2004)
- **12.12.060 – Hours for use—Applicability.** No persons shall enter, use, cross or remain in a park facility, or the parking lot facility adjacent thereto, except during the hours that the park facility and parking lot facility is open to the public as provided in this chapter. When an activity concludes at or near 10:00 p.m., participants and/or spectators shall be allowed until 10:30 p.m. to depart from the park facility. (Ord. 1332 § 2 (part), 2004)

[9] Existing light spillover and glare at Highlands Park was calculated by Musco using available electrical as-built drawings and field verification from Arum Consulting Engineers. Based on the existing pole heights, fixture counts, and fixture configurations, the existing light conditions at Highlands Field were modeled based on designs from similar fields. Because existing aiming diagrams for Highlands Park are unavailable, the existing light spillover and glare levels cannot be 100 percent accurate, but represent the most accurate representation by qualified professionals.

a. Master Plan for Parks, Open Space, Buildings and Other Recreational Facilities. The City's Master Plan for Park, Open Space, Buildings, and Other Recreational Facilities (Parks Master Plan) includes the following recommendations:

- Consider adding lighting and improve drainage on Flanagan Field. Consider installing synthetic turf infields for improved multi-use. (page 81).
- Add lighting to Stadium Field for night soccer and baseball play. (page 82).

b. City of San Carlos Field Use and Agronomic Specifications Report. The City's Field Use and Agronomic Specification Report contains strategies for increasing the availability of field space in the City of San Carlos. Specific recommendation related to visual resources is contained below:

- Following installation of the synthetic field, evaluate performance over a two year period. If the Recreation Program continues to grow at the current pace and the synthetic field meets the expectations of the players, coaches and the Park and Recreation Administration, consider the installation of a second synthetic field with lights at Stadium. (page 19).

c. City of San Carlos Field Use Policy. The City's Field Use Policy ensures that City-owned, maintained and managed park and athletic field facilities, including the fields owned by the San Carlos School District, are utilized for recreational, athletic, cultural, educational, social and community service functions that meet the needs and interests of the community, and that permitted users are fully informed as to the City's guidelines that govern their use of the park and athletic field facilities.

3. Impacts and Mitigation Measures

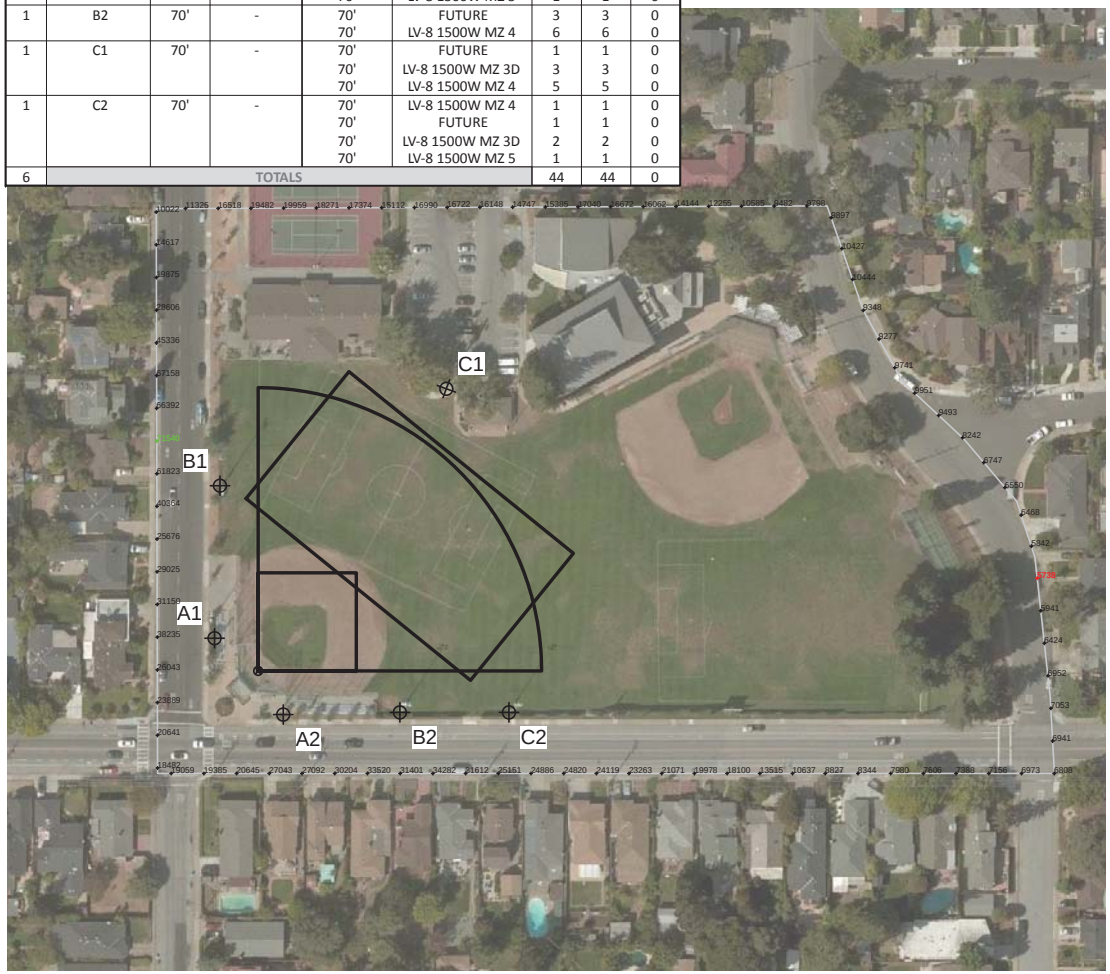
This section analyzes impacts related to visual resources that could result from development of the proposed project. The section begins with the criteria of significance, which establish the thresholds for determining whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project. Mitigation measures are recommended, as necessary.

a. Criteria of Significance. Implementation of the proposed project would have a significant effect on visual resources if it would:

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

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	60'	-	60'	LV-8 1500W MZ 4	2	2	0
				60'	FUTURE	3	3	0
				60'	LV-8 1500W MZ 5	1	1	0
1	B1	70'	-	70'	LV-8 1500W MZ 4	5	5	0
				70'	FUTURE	3	3	0
				70'	LV-8 1500W MZ 5	1	1	0
1	B2	70'	-	70'	FUTURE	3	3	0
				70'	LV-8 1500W MZ 4	6	6	0
1	C1	70'	-	70'	FUTURE	1	1	0
				70'	LV-8 1500W MZ 3D	3	3	0
				70'	LV-8 1500W MZ 4	5	5	0
1	C2	70'	-	70'	LV-8 1500W MZ 4	1	1	0
				70'	FUTURE	1	1	0
				70'	LV-8 1500W MZ 3D	2	2	0
				70'	LV-8 1500W MZ 5	1	1	0
6	TOTALS					44	44	0



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

GRID SUMMARY

Name:	**Property Line Spill**
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED CANDELA (PER FIXTURE)

	Entire Grid
Scan Average:	**19238.604**
Maximum:	71539.55
Minimum:	5737.56
No. of Points:	85

LUMINAIRE INFORMATION

Color / CRI:	1500W MZ / XXXX
Luminaire Output:	155,000 / 155,000 lumens
Average LLF:	0.800
No. of Luminaires:	**30**
Total Load:	48.0 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
LV-8	--	--	--
FUTURE	--	--	--

Reported per TM-21-11. See luminaire datasheet for details.

LSA

FIGURE IV.A-7

N

0 150 300

FEET

SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVA7.ai (7/19/17)

Burton/Highlands Parks Project EIR

Burton Park Existing Glare, Maintained Candela

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	1C2, 3C2	70'	-	70'	SC-1 MH 1500W MH 4	8	8	0
2	1C1, 3C1	70'	-	70'	SC-1 MH 1500W MH 4	11	11	0
1	1C3	70'	-	70'	SC-1 MH 1500W MH 4	6	6	0
4	3A2 A1-A2, 3A1	50'	-	50'	SC-1 MH 1500W MH 4	4	4	0
2	B1, 3B1	70'	-	70'	SC-1 MH 1500W MH 4	7	7	0
2	B2, 3B2	70'	-	70'	SC-1 MH 1500W MH 4	5	5	0
13	TOTALS					84	84	0

GRID SUMMARY

Name:	**Property Line Spill**
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**0.5539**
Maximum:	3.74
Minimum:	0.05
No. of Points:	133

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI / 1500W MH
Luminaire Output:	121,000 / 155,000 lumens
No. of Luminaires:	**84**
Total Load:	134.4 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000
SPORTSCLUSTER 1	--	--	--

Reported per TM-21-11. See luminaire datasheet for details.

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

LSA

FIGURE IV.A-8

N

0 200 400

FEET

SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVA8.ai (7/19/17)

Burton/Highlands Parks Project EIR

Highlands Park Existing Light Spillover, Horizontal Footcandles

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	1C2, 3C2	70'	-	70'	SC-1 MH 1500W MH 4	8	8	0
2	1C1, 3C1	70'	-	70'	SC-1 MH 1500W MH 4	11	11	0
1	1C3	70'	-	70'	SC-1 MH 1500W MH 4	6	6	0
4	3A2 A1-A2, 3A1	50'	-	50'	SC-1 MH 1500W MH 4	4	4	0
2	B1, 3B1	70'	-	70'	SC-1 MH 1500W MH 4	7	7	0
2	B2, 3B2	70'	-	70'	SC-1 MH 1500W MH 4	5	5	0
13	TOTALS					84	84	0

GRID SUMMARY

Name:	**Property Line Spill**
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED MAX VERTICAL FOOTCANDLES

	Entire Grid
Scan Average:	**3.5470**
Maximum:	9.76
Minimum:	0.63
No. of Points:	133

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI / 1500W MH
Luminaire Output:	121,000 / 155,000 lumens
No. of Luminaires:	**84**
Total Load:	134.4 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000
SPORTSCLUSTER 1	--	--	--

Reported per TM-21-11. See luminaire datasheet for details.

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

LSA

FIGURE IV.A-9

N

0 200 400

FEET

SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVA9.ai (7/19/17)

Burton/Highlands Parks Project EIR

Highlands Park Existing Light Spillover, Vertical Footcandles

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	1C2, 3C2	70'	-	70'	SC-1 MH 1500W MH 4	8	8	0
2	1C1, 3C1	70'	-	70'	SC-1 MH 1500W MH 4	11	11	0
1	1C3	70'	-	70'	SC-1 MH 1500W MH 4	6	6	0
4	3A2 A1-A2, 3A1	50'	-	50'	SC-1 MH 1500W MH 4	4	4	0
2	B1, 3B1	70'	-	70'	SC-1 MH 1500W MH 4	7	7	0
2	B2, 3B2	70'	-	70'	SC-1 MH 1500W MH 4	5	5	0
13	TOTALS					84	84	0

GRID SUMMARY

Name:	**Property Line Spill**
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED CANDELA (PER FIXTURE)

	Entire Grid
Scan Average:	**93272.4922**
Maximum:	120836.79
Minimum:	75794.13
No. of Points:	133

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI / 1500W MH
Luminaire Output:	121,000 / 155,000 lumens
No. of Luminaires:	**84**
Total Load:	134.4 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000
SPORTSCLUSTER 1	--	--	--

Reported per TM-21-11. See luminaire datasheet for details.

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

LSA

FIGURE IV.A-10

N

0 200 400

FEET

SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVA10.ai (7/19/17)

Burton/Highlands Parks Project EIR

Highlands Park Existing Glare, Maintained Candela

For the purposes of this EIR, the City of San Carlos has selected a significance threshold for light spillover at the property line of an average of 0.8 either vertical or horizontal footcandles during pre-curfew hours (up to 10:00 p.m. at night) and 0.2 footcandles during post-curfew hours (after 10:00 p.m.), based on IESNA Handbook standards. Based on CIE standards, the selected significance threshold for glare is that off-site glare intensity should not exceed 10,000 candelas during pre-curfew hours or 1,000 candelas during post-curfew hours at the nearest adjacent use.

b. Project Impacts. The following discussion describes the potential impacts to visual resources that would result from implementation of the proposed project. This analysis assumes that field use and lighting at all the project sites would end at approximately 10:00 p.m. per the Field Use Policy, Municipal Code Section 12.12.050, and general practice by the Parks & Recreation Department.

(1) Scenic Vistas. Implementation of the proposed project would result in the installation of new light poles and fixtures and the replacement of existing lighting at Burton and Highlands Parks. New light poles at both parks would range from 60 feet in height to 80 feet. Public views of the new lighting systems at the two parks would be visible from within the parks themselves and the surrounding roadways especially when the lights are in use.

The City of San Carlos contains a variety of topography which ranges from land at sea level to the hilly western portion of the City with elevation up to 900 feet. The City's General Plan identifies the hillsides and ridgelines within the City as scenic resources that provide vantage points and scenic vistas.[10] More specifically, public views of the surrounding open space and the San Francisco Bay are available from roadways west of Alameda de las Pulgas, including from City streets, parks, and open space. Due to the topography and tall trees, views of surrounding hillsides, open space and the San Francisco Bay are not visible from either Burton Park or Highlands Park. Because scenic views of the hills and Bay are limited at night and the new light poles and light arrays themselves are slim and unobtrusive, construction of the project would not have a substantial adverse effect on public views of scenic vistas. The new and replacement lighting systems will be visible to the areas surrounding the parks but would not block or obscure views of surrounding open space or the San Francisco Bay. As such, the proposed project would result in a less-than-significant impact to public views of scenic vistas.

(2) Scenic Resources Within a State Scenic Highway. Development of the proposed project would not have an impact on scenic resources within a State Scenic Highway. Highlands Park is located approximately 1.4 miles east of I-280 which is an officially designated State Scenic Highway from the Santa Clara County line to the City of San Bruno city limit. Burton Park is located approximately 2.7 miles east of I-280. The proposed project does not include elements that would impact trees, rock outcroppings or historic buildings within a State Scenic Highway. In addition, development of the proposed project would not be visible from I-280 or any other highways in the area. Therefore, the proposed project would not damage a scenic resource within a State Scenic Highway, and the project would not impact scenic resources or a State Scenic Highway.

[10] San Carlos, City of, 2009. *San Carlos 2030 General Plan Land Use Element.* Website: cityofsancarlos.org/civicax/filebank/blobdload.aspx?blobid=5922 (accessed July 18, 2017).

(3) Visual Character. Implementation of the proposed project would result in the following improvements: 1) installation of new light poles and fixtures utilizing LED lighting at Flanagan Field, Burton Park; 2) replacement of existing metal halide light fixtures with LED lighting at Madsen Field, Burton Park; 3) installation of new light poles and fixtures utilizing LED lighting at Stadium Field, Highlands Park; and 4) replacement of existing metal halide lighting system, including light poles and fixtures, with LED lighting system at Highlands Field, Highlands Park. Due to the developed nature of Burton and Highlands Parks and the existing field lighting at both parks, the upgrade of the existing lighting with LED lights and new poles at Highlands Field would be visually compatible with the character of the parks at both sites. The installation of new lights at Flanagan Field and Stadium Field would also be compatible with the visual character and use of the parks. Therefore, the visual character of the sites would not be degraded because both sites would maintain their existing character as sports fields within developed City parks.

At both project sites, the surrounding residential properties abutting the parks would have views of the new light fixtures and poles from their front or rear yards and/or windows. However, as shown in Viewpoint 5 in Figure IV.A-2c and Viewpoint 8 in Figure IV.A-4d, for some of the residences, existing trees and structures would partially shield views of the light fixtures and poles. In addition, the replacement of the existing lighting at Madsen Field and Highlands Field would not degrade the existing visual character of the parks and would represent a beneficial impact as the light spillover and glare from the existing lighting would be substantially decreased, as described below. As such, impacts associated with the visual quality and character of the sites and surroundings would be less than significant.

(4) Light Spillover and Glare. The following discussion analyzes impacts associated with light spillover and glare associated with project implementation at Burton and Highlands Parks.

Burton Park. The proposed project includes replacing the existing lighting at Madsen Field with LED lights and installing new LED lighting at Flanagan Field. The project would also include the installation of new lighting poles and fixtures at Flanagan Field. The proposed light pole locations and the orientation of the light fixtures (described in Chapter III, Project Description) are designed to minimize potential spill light beyond the perimeter of the sports fields and into surrounding residential neighborhoods. The proposed light fixtures and pole configuration have been specifically designed to direct light onto the sports fields with minimal glare and light spill. Design elements for light beam control on the light fixtures include factory aiming, visors and shielding, and appropriate light levels recommended by the IESNA RP-6 Current Recommended Practice for Sports and Recreational Area Lighting and compliance with the International Dark Sky Association.[11] In addition, the replacement of the metal halide lights with LED lights at Madsen Field would further reduce light spill and glare to the surrounding neighborhood. As shown in Figures IV.A-11 and IV.A-12, the proposed project would result in a significant decrease in light spill to the surrounding neighborhood.

[11] The International Dark Sky Association is an educational/environmental 501(c)(3) non-profit organization whose mission is to "preserve and protect the nighttime environment through environmentally responsible outdoor lighting".

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	60'	-	25'	TLC-LED-1150	1	1	0
				60'	TLC-LED-1150	2	2	0
2	A3-A4	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	4	4	0
2	B1-B2	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	5	5	0
2	B3-B4	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	7	7	0
1	C1	70'	-	70'	TLC-LED-1150	5	5	0
1	C2	70'	-	70'	TLC-LED-1150	4	4	0
2	C3-C4	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	4	4	0
12	TOTALS					63	63	0

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

GRID SUMMARY

Name:	**Property Spill Line**
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**0.010**
Maximum:	0.09
Minimum:	0.00
No. of Points:	86

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	121,000 lumens
No. of Luminaires:	**63**
Total Load:	72.45 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000

Reported per TM-21-11. See luminaire datasheet for details.

LSA

FIGURE IV.A-11

N

0 150 300

FEET

SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

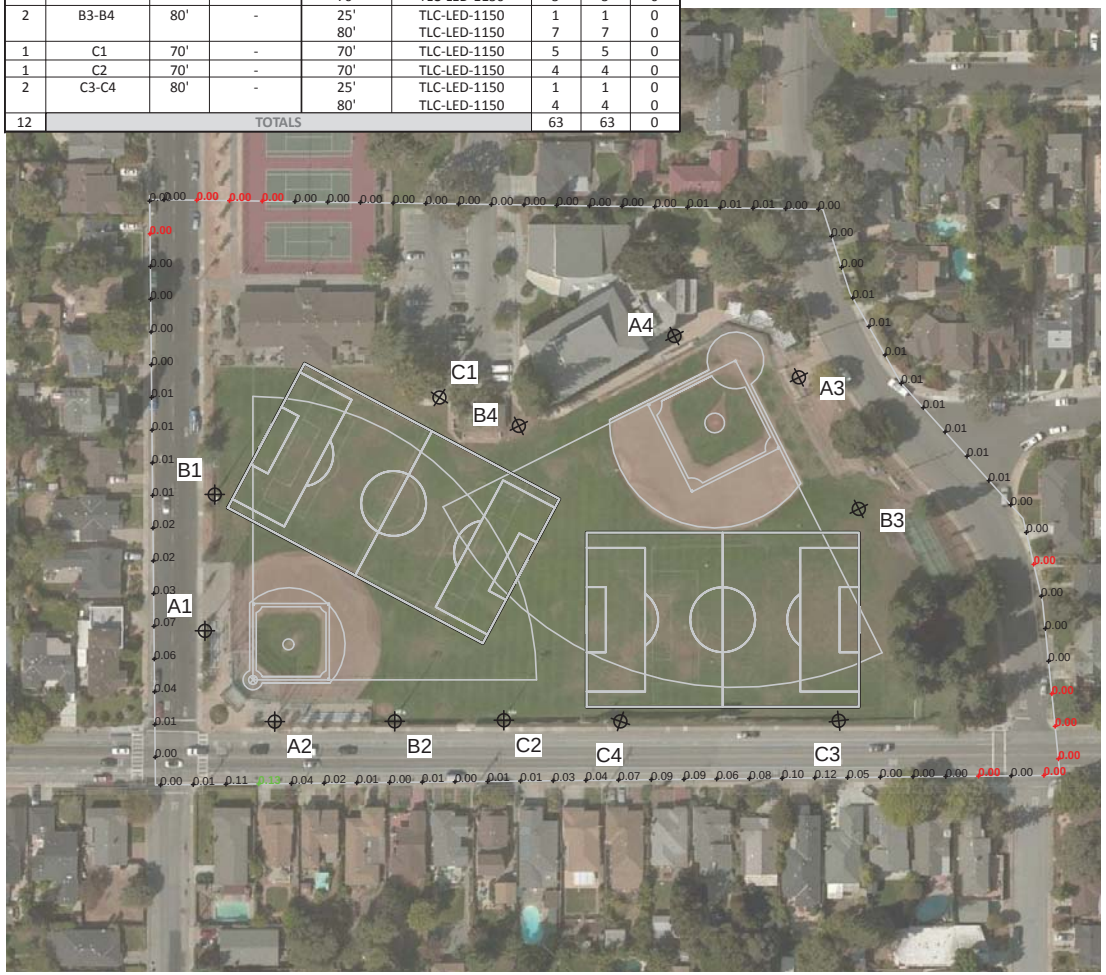
I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVA11.ai (7/19/17)

Burton/Highlands Parks Project EIR

Burton Park Proposed Project Light Spillover, Horizontal Footcandles

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	60'	-	25'	TLC-LED-1150	1	1	0
				60'	TLC-LED-1150	2	2	0
2	A3-A4	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	4	4	0
2	B1-B2	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	5	5	0
2	B3-B4	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	7	7	0
1	C1	70'	-	70'	TLC-LED-1150	5	5	0
1	C2	70'	-	70'	TLC-LED-1150	4	4	0
2	C3-C4	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	4	4	0
12	TOTALS					63	63	0



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

GRID SUMMARY

Name:	**Property Spill Line**
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED MAX VERTICAL FOOTCANDLES

	Entire Grid
Scan Average:	**0.017**
Maximum:	0.13
Minimum:	0.00
No. of Points:	86

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	121,000 lumens
No. of Luminaires:	**63**
Total Load:	72.45 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000

Reported per TM-21-11. See luminaire datasheet for details.

LSA

FIGURE IV.A-12

N

0 150 300

FEET

SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVA12.ai (7/19/17)

Burton/Highlands Parks Project EIR

Burton Park Proposed Project Light Spillover, Vertical Footcandles

Assuming that both fields are lit at the same time, the proposed project would result in an average of 0.010 footcandles for horizontal spill light on the properties surrounding Burton Park and a maximum of 0.09 footcandles for horizontal spill light at only one location (the green number) along Brittan Avenue, near the Woodland Avenue intersection. The proposed project would also result in an average of 0.017 footcandles for vertical spill light levels and a maximum of 0.13 footcandles for vertical spill light at one location along Brittan Avenue, near the Cedar Street intersection. Therefore, the project would not generate an average of spillover light in excess of 0.8 footcandles and would substantially reduce existing light spillover associated with the existing lights. As such, impacts from light spillover onto nearby residences at Burton Park would be less than significant.

As shown in Figure IV.A-13, the proposed project would generate an average of 513 candelas at the residential properties surrounding Burton Park. The maximum glare would be 2,588 candelas at a point along Brittan Avenue. Therefore, the proposed project would reduce the average glare to surrounding residences from 19,238 candelas to 513 candelas and that would be a significant beneficial effect. The average candelas produced by the proposed project during pre-curfew hours would be far less than the threshold of 10,000 candelas. As such, the proposed project would have a less-than-significant impact associated with glare on nearby residences at Burton Park.

Highlands Park. Development of the proposed project at Highlands Park would include the replacement of the existing metal halide light fixtures at Highlands Field with LED lights. The project would also include the installation of new lighting poles and fixtures at Stadium Field, on the north side of the park. The proposed siting of light poles and the orientation of the light fixtures are designed to minimize potential spill light beyond the perimeter of the two fields and into surrounding residential neighborhoods. The proposed light fixtures and pole configuration have been specifically designed to direct light onto the sports fields with minimal glare and light spill. Design elements for light beam control on the light fixtures include factory aiming, visors and shielding, and appropriate light levels recommended by the IESNA RP-6 Current Recommended Practice for Sports and Recreational Area Lighting and compliance with the International Dark Sky Association. The replacement of the metal halide lights with LED lights and the minor reconfiguration the lighting poles at Highlands Field would further reduce light spill and glare to the surrounding neighborhood. As shown in Figures IV.A-14 and IV.A-15, the proposed project would result in a significant decrease in light spill to the surrounding neighborhood associated with the lights at Highlands Field.

Assuming all fields are lit, the proposed project would result in an average of 0.0048 horizontal footcandles for spill light on the properties surrounding the park and a maximum of 0.07 horizontal footcandles for spill light at one location north of Stadium Field (the green number). The proposed project would also result in an average of 0.0083 vertical footcandles for spill light levels and a maximum of 0.09 vertical footcandles at two locations north of Stadium Field. However, light spillover on properties to the east, south, and west of Highlands Park would generally decrease with implementation of the proposed project. The proposed project would not generate additional lighting in excess of an average of 0.8 footcandles, and as such, impacts from light spillover onto nearby residences at Highlands Park would be less than significant.

As shown in Figure IV.A-16, the proposed project would generate an average of 249 candelas at properties surrounding Highlands Park, down from an average of 93,272 candelas under current conditions which would be a significant project benefit. The maximum glare with the project would be 2,233 candelas at a location north of Stadium Field. The project would generally reduce glare

along the western and eastern edges of the park. The proposed project would not exceed the threshold of an average of 10,000 candelas during pre-curfew hours and, as such, the proposed project would have a less-than-significant impact associated with glare on nearby land uses.

Additionally low level safety lighting will need to be installed in the vicinity of Stadium Field to allow field users to leave the fields after the lights are turned off and access the parking areas. To address safety and security issues and light spillover concerns, the safety lighting shall be designed to include smart controls and shielding to achieve appropriate lighting levels, no off-site spillover or glare, and maximum energy savings. For pedestrian traffic, a design to achieve these goals could include a combination of lighting bollards and low level lighting poles (typically mounted at 12 feet in height) or a similar design. Minimum horizontal illuminance on typical walkway pathways, according to general IES guidelines is 0.2 footcandles at any given point (not average) during all hours. To insure this lighting level is met, safety lighting shall be controlled via photocells, time clock or occupancy controls to eliminate daytime operation. Additionally, LED lighting technology is recommended for better uniformity, range of color, expected long life and to insure minimal light trespass and glare to adjacent properties. Because the design of the safety lighting would ensure that the lights would not have an illuminance greater than 0.2 footcandles during pre- or post-curfew hours and the potential impact would be less than significant.

As evaluated in this section, the proposed installation of new field lighting and safety lighting on currently unlit fields at Burton and Highlands Parks and the upgrade of existing lighting at the parks with LED lights would result in less-than-significant impacts associated with light spillover and glare, and would significantly improve the existing light spillover and glare conditions on the lit fields. Additionally, by meeting the standards established by the IESNA and the CIE for night lighting, it also ensures that the proposed project would not result in substantial negative human health impacts that could result from excessive light spillover and glare such as obesity, depression, sleep disorders, diabetes, and cancer.

c. Cumulative Impacts. The geographic area considered for the cumulative visual resources analysis includes any new lighting projects in the adjacent neighborhoods in the vicinity of the project sites. At this time, the City is not aware of any new sources of substantial light or glare that would combine with the new lighting proposed by the project to create a significant cumulative impact related to degrading public views of a scenic vista or substantially degrading the existing visual character or quality of the surrounding areas. The new nighttime lighting would have less-than-significant light spillover and glare effects on the immediate surrounding uses, and there are no other known sources of proposed nighttime lighting that could combine with the proposed project lighting to substantially increase the cumulative lighting and glare levels. In addition, the replacement lighting at Madsen Field and Highlands Field would reduce and improve the existing light spillover and glare conditions, and new projects in the City of San Carlos would be designed or conditioned, in accordance with City policies, to avoid significant adverse effects on visual quality, nighttime light levels or other elements of the visual environment. Therefore, past, present, and future projects in the area in combination with the proposed project would not result in a significant cumulative impact to visual resources.

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	A1-A2	60'	-	25'	TLC-LED-1150	1	1	0
				60'	TLC-LED-1150	2	2	0
2	A3-A4	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	4	4	0
2	B1-B2	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	5	5	0
2	B3-B4	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	7	7	0
1	C1	70'	-	70'	TLC-LED-1150	5	5	0
1	C2	70'	-	70'	TLC-LED-1150	4	4	0
2	C3-C4	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	4	4	0
12	TOTALS					63	63	0

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

GRID SUMMARY

Name:	**Property Spill Line**
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED CANDELA (PER FIXTURE)

	Entire Grid
Scan Average:	**513.637**
Maximum:	2588.71
Minimum:	0.00
No. of Points:	86

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	121,000 lumens
No. of Luminaires:	**63**
Total Load:	72.45 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000

Reported per TM-21-11. See luminaire datasheet for details.

LSA

FIGURE IV.A-13

N

0 150 300

FEET

SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVA13.ai (7/19/17)

Burton/Highlands Parks Project EIR

Burton Park Proposed Project Glare, Maintained Candela

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	A1-A4	60'	-	60'	TLC-LED-1150	3	3	0
2	A5-A6	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	3	3	0
1	B1	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	6	6	0
3	B2, B4, C2	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	4	4	0
2	B3, C1	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	7	7	0
1	B5	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	5	5	0
1	C3	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	8	8	0
2	S1, S5	70'	-	70'	TLC-LED-1150	4	4	0
2	S2, S4	70'	-	70'	TLC-LED-1150	3	3	0
1	S3	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	6	6	0
19	TOTALS					94	94	0

GRID SUMMARY

Name:	**Property Line Spill**
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**0.0048**
Maximum:	0.07
Minimum:	0.00
No. of Points:	138

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	121,000 / 40,600 lumens
No. of Luminaires:	**94**
Total Load:	104.86 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000

Reported per TM-21-11. See luminaire datasheet for details.

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

LSA

FIGURE IV.A-14

N

0 200 400

FEET

SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

Burton/Highlands Parks Project EIR

Highlands Park Proposed Project Light Spillover, Horizontal Footcandles

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVA14.ai (7/13/17)

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	A1-A4	60'	-	60'	TLC-LED-1150	3	3	0
2	A5-A6	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	3	3	0
1	B1	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	6	6	0
3	B2, B4, C2	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	4	4	0
2	B3, C1	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	7	7	0
1	B5	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	5	5	0
1	C3	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	8	8	0
2	S1, S5	70'	-	70'	TLC-LED-1150	4	4	0
2	S2, S4	70'	-	70'	TLC-LED-1150	3	3	0
1	S3	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	6	6	0
19	TOTALS					94	94	0

GRID SUMMARY

Name:	**Property Line Spill**
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED MAX VERTICAL FOOTCANDLES

	Entire Grid
Scan Average:	**0.0083**
Maximum:	0.09
Minimum:	0.00
No. of Points:	138

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	121,000 / 40,600 lumens
No. of Luminaires:	**94**
Total Load:	104.86 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000

Reported per TM-21-11. See luminaire datasheet for details.

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

LSA

FIGURE IV.A-15

N

0 200 400

FEET

SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

Burton/Highlands Parks Project EIR

Highlands Park Proposed Project Light Spillover, Vertical Footcandles

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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	A1-A4	60'	-	60'	TLC-LED-1150	3	3	0
2	A5-A6	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	3	3	0
1	B1	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	6	6	0
3	B2, B4, C2	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	4	4	0
2	B3, C1	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	7	7	0
1	B5	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	5	5	0
1	C3	80'	-	25'	TLC-LED-1150	1	1	0
				80'	TLC-LED-1150	8	8	0
2	S1, S5	70'	-	70'	TLC-LED-1150	4	4	0
2	S2, S4	70'	-	70'	TLC-LED-1150	3	3	0
1	S3	70'	-	25'	TLC-LED-1150	1	1	0
				70'	TLC-LED-1150	6	6	0
19	TOTALS					94	94	0

GRID SUMMARY

Name:	**Property Line Spill**
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED CANDELA (PER FIXTURE)

	Entire Grid
Scan Average:	**249.0441**
Maximum:	2233.27
Minimum:	0.00
No. of Points:	138

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	121,000 / 40,600 lumens
No. of Luminaires:	**94**
Total Load:	104.86 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000

Reported per TM-21-11. See luminaire datasheet for details.

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

LSA

FIGURE IV.A-16

N

0 200 400

FEET

SOURCES: JACOB MCCREA; MUSCO LIGHTING, MAY 2017.

Burton/Highlands Parks Project EIR

Highlands Park Proposed Project Glare, Maintained Candela

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B. TRANSPORTATION AND CIRCULATION

This section was prepared by W-Trans transportation consultants and describes the existing transportation, circulation and parking conditions in the vicinity of the project sites and addresses the potential impacts of the proposed project in terms of intersection level of service as well as trip generation, traffic distribution, traffic assignment, and potential intersection and roadway improvements to mitigate expected future deficiencies. The project's potential effects on bicycle and pedestrian facilities, transit services and parking in the project area are also evaluated. The proposed project primarily focused on in this section is the effects of the increased hours of use and resulting trips associated with installation of new field lights at Burton Park and Highlands Park. If the change in use of fields or circulation at Highlands Park per provisions in the Settlement Agreement could result in changes affecting transportation and circulation issues, such potential effects are explicitly identified in this section. Appendix E provides transportation data and background information.

1. Setting

The setting for the transportation and circulation issues and the scope of the analysis documented in this section are described below. The remainder of this section presents the analysis methodologies and a discussion of the existing and future background conditions related to transportation and circulation.

a. Scope of Study. Figure IV.B-1 shows the location of the proposed Burton and Highlands Parks project sites, the surrounding street network, study intersections and field confirmed lane geometries. The proposed project would generate vehicular trips that would in turn increase traffic volumes on the nearby street network. The potential traffic impacts related to the proposed project were evaluated following the standards and methodologies set forth by the City of San Carlos. Significant traffic impacts due to the project were determined based on weekday PM, and weekend PM peak hour levels of service at twelve unsignalized study intersections identified by the City for review. The study intersections organized by project site are:

Burton Park

1. Cedar Street/Arroyo Avenue
2. Chestnut Street/Arroyo Avenue
3. Chestnut Street/Baytree Road
4. Woodland Avenue/Morse Boulevard
5. Woodland Avenue/Aster Road
6. Cedar Street/Brittan Avenue
7. Woodland Avenue/Brittan Avenue

Highlands Park

8. Elston Court/Coleman Court
9. Aberdeen Drive/Dundee Lane
10. Aberdeen Drive/Glasgow Lane
11. Aberdeen Drive-Hewitt Drive/Melendy Drive
12. Melendy Drive/Alameda de las Pulgas

Operating conditions during the weekday and weekend evening peak periods were evaluated to capture the highest potential impacts for the proposed project as well as the highest volumes on the local transportation network. This study focuses on the traffic impacts while new field lights are in operation. The planned operation of the field lights would occur during the evening peak period between 5:00 p.m. and 8:00 p.m. for both the typical weekday and weekend conditions. Traffic conditions were evaluated for the following scenarios:

- *Existing Conditions.* Existing traffic volumes were obtained from new traffic counts conducted on April 19 and 22, 2017.
- *Near-Term (Year 2019) Conditions*. Near-Term peak hour traffic volumes were estimated by adding projected background traffic growth to existing volumes derived from the C/CAG travel forecast model for a two-year horizon (year 2019). This horizon year was included as part of the analysis because the proposed project is anticipated to be completed on or near the year 2019. The Near-Term Condition is also considered to be the baseline year.
- *Near-Term Plus Project Conditions.* Projected peak hour traffic volumes were estimated by adding the additional traffic generated by the project to Near-Term traffic volumes. Project conditions were evaluated relative to Near-Term Conditions in order to determine impacts of the project.
- *Cumulative (Year 2040) Conditions.* Cumulative Conditions represent forecasted future year 2040 traffic conditions. Cumulative traffic volumes (without the project) were estimated using the C/CAG Travel Demand Model.
- *Cumulative Plus Project Conditions.* Cumulative with project traffic volumes were estimated by adding the additional traffic generated by the project to cumulative traffic volumes. Cumulative Plus Project Conditions were evaluated relative to Cumulative Conditions in order to determine the project's contribution to any significant cumulative impacts.

b. Traffic Analysis Methodology. Level of Service (LOS) is used to rank traffic operations on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

The study intersections were analyzed using methodologies published in the Highway Capacity Manual (HCM), Transportation Research Board, 2000. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle.

(1) Signalized Intersections. As noted above all of the study intersections are currently unsignalized. The Cedar Street/Brittan Avenue study intersection that may be controlled by a traffic signal in the future, was evaluated using the signalized methodology from the HCM. This methodology is based on factors including traffic volumes, green time for each movement, phasing, whether or not the signals are coordinated, truck traffic, and pedestrian activity. Average stopped delay per vehicle in seconds is used as the basis for evaluation in this LOS methodology. For purposes of this study, delays were calculated using optimized signal timing. The correlation between average delay and LOS is shown in Table IV.B-1.

LSA

FIGURE IV.B-1

NOT TO SCALE

Burton/Highlands Parks Project EIR
Study Areas and Lane Configurations

SOURCE: W-TRANS, AUGUST 18, 2017.

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Table IV.B-1: Signalized Intersection Level of Service Definitions

Level of Service	Description	Average Control Delay per Vehicle (sec.)
A	Most vehicles arrive during the green phase, so do not stop at all.	10.0 or Less
B	More vehicles stop than with LOS A, but many drivers still do not have to stop.	10.1 to 20.0
C	The number of vehicles stopping is significant, although many still pass through without stopping.	20.1 to 35.0
D	The influence of congestion is noticeable, and most vehicles have to stop.	35.1 to 55.0
E	Most, if not all, vehicles must stop and drivers consider the delay excessive	55.1 to 80.0
F	Vehicles may wait through more than one cycle to clear the intersection.	Greater than 80.0

Source: Transportation Research Board, 2000. *Highway Capacity Manual*

(2) Unsignalized Intersections. The Levels of Service for the intersections with side street stop controls, or those which are unsignalized and have one or two approaches stop controlled, were analyzed using the "Two-Way Stop-Controlled" intersection capacity method from the HCM. This methodology determines a level of service for each minor turning movement by estimating the level of average delay in seconds per vehicle. Results are presented for individual movements together with the weighted overall average delay for the intersection.

The study intersections with stop signs on all approaches were analyzed using the "All-Way Stop-Controlled" Intersection methodology from the HCM. This methodology evaluates delay for each approach based on turning movements, opposing and conflicting traffic volumes, and the number of lanes. Average vehicle delay is computed for the intersection as a whole, and is then related to a Level of Service. The correlation between average delay and level of service is shown in Table IV.B-2.

Table IV.B-2: Unsignalized Intersection Level of Service Definitions

Level of Service	Two-Way Stop-Controlled	All-Way Stop-Controlled	Average Control Delay per Vehicle (sec.)
A	Gaps in traffic are readily available for drivers exiting the minor street.	Upon stopping, drivers are immediately able to proceed.	10.0 or Less
B	Gaps in traffic are somewhat less readily available than with LOS A, but no queuing occurs on the minor street.	Drivers may wait for one or two vehicles to clear the intersection before proceeding from a stop.	10.1 to 15.0
C	Acceptable gaps in traffic are less frequent, and drivers may approach while another vehicle is already waiting to exit the side street.	Drivers will enter a queue of one or two vehicles on the same approach, and wait for vehicle to clear from one or more approaches prior to entering the intersection.	15.1 to 25.0
D	There are fewer acceptable gaps in traffic, and drivers may enter a queue of one or two vehicles on the side street.	Queues of more than two vehicles are encountered on one or more approaches.	25.1 to 35.0
E	Few acceptable gaps in traffic are available, and longer queues may form on the side street.	Longer queues are encountered on more than one approach to the intersection.	35.1 to 50.0
F	Drivers may wait for long periods before there is an acceptable gap in traffic for exiting the side streets, creating long queues.	Drivers enter long queues on all approaches.	Greater than 50.0

Source: Transportation Research Board, 2000. *Highway Capacity Manual*.

c. Existing Transportation Conditions. The following section generally describes the transportation system in the project study area, including existing lane geometry, peak hour volumes, and level of service conditions for each of the study intersections and roadway segments.

(1) Existing Street Network. Access to both Burton Park and Highlands Park would not be altered with development of the proposed project and ingress and egress would continue to be provided by the existing roadway network. These roadways are described below.

- *Aberdeen Drive* is a two lane, north-south local roadway. On-street parking is provided on both sides of Aberdeen Drive. Parking along a portion of the eastside of Aberdeen Drive is prohibited on Saturdays and Sundays from 8:00 a.m. to 6:00 p.m. Aberdeen Drive abuts single-family homes to the east and the Highlands Park Sports Fields to the west. The posted speed limit on Aberdeen Drive is 25 miles per hour (mph). It should be noted that the Settlement Agreement specified that the City of San Carlos would install two speed humps on Aberdeen Drive in the area adjacent to Highlands Park. Since 2010, only one speed hump has been installed on Aberdeen Drive just north of the driveway to the north parking lot. Transportation and circulation industry best practices recommend that speed humps be placed at distances not less than 500 feet from each other. Since the distance from the existing speed hump and both ends of Aberdeen Drive is 500 feet or less, a second speed hump on Aberdeen Drive is not recommended, and the City is not planning on constructing a second speed hump in this location. Therefore, the existing condition of having only one speed hump on Aberdeen Drive is part of the project evaluated in this EIR.
- *Alameda de las Pulgas* is a two lane, north-south arterial roadway. On-street parking is provided on both sides of Alameda de las Pulgas. Class II bike lanes are provided between San Carlos Avenue and Eaton Avenue. Adjacent land uses are residential with single-family homes present on either side of the roadway. The posted speed limit is 30 mpg.
- *Brittan Avenue* is a two to four lane, east-west arterial, which serves residential land uses by providing local access to El Camino Real and U.S. Highway 101 (US 101) in the vicinity of the study area. There is on-street parking on both sides of Brittan Avenue from Cedar Street to Laurel Street. Class II bikes lanes are provided along Brittan Avenue between Laurel Street and Alameda de las Pulgas. The posted speed limit of Brittan Avenue is 30 mph.
- *Cedar Street* is a two lane, north-south collector road, which serves residential land uses in the vicinity of the study area. There is on-street parking on both sides of Cedar Street. This street is a Class III bikeway with "Sharrow" bike lane markings provided. Adjacent land uses are residential with single-family homes present west of the roadway and Burton Park along the east side. The posted speed limit in the vicinity of the study area is 25 mph.
- *Melendy Drive* is a two lane, east-west collector road. On-street parking is provided on both sides of Melendy Drive. Adjacent land uses are residential with single-family homes present on either side of the roadway. The posted speed limit is 25 mph.

(2) Existing Lane Configurations and Traffic Volumes. The existing lane configurations at the study intersections were determined by observations in the field. Existing peak hour traffic volumes at the intersections were obtained from manual turning-movement counts conducted in April 2017 at the study intersections. The existing peak hour intersection volumes are shown on Figure IV.B-2. Copies of recent traffic counts at each study intersection are provided in Appendix E.

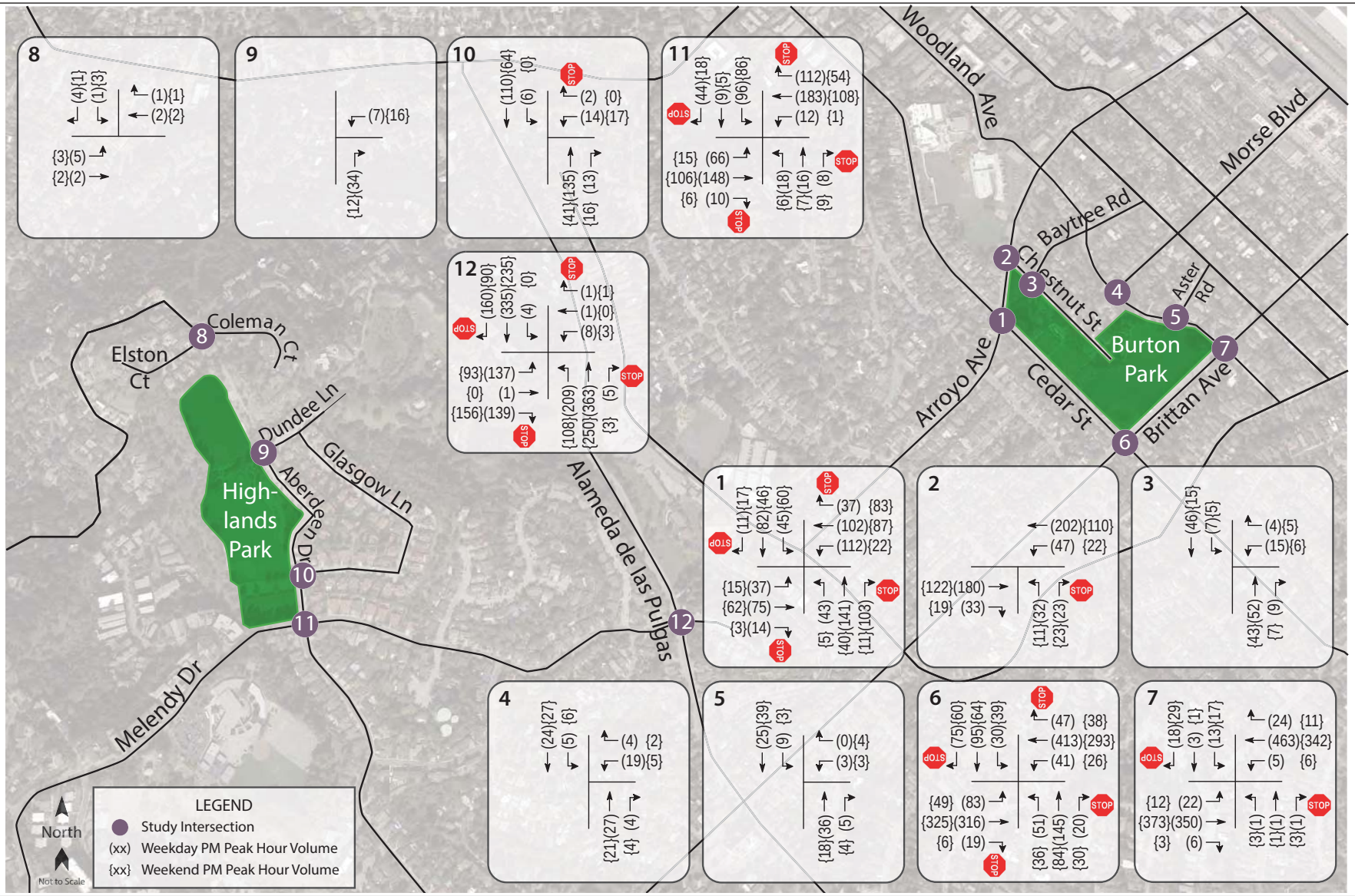

FIGURE IV.B-2

LSA

NOT TO SCALE

Burton/Highlands Parks Project EIR

Existing No Project Traffic Volumes

SOURCE: W-TRANS, AUGUST 18, 2017.

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(1) Existing Conditions. The Existing Conditions scenario provides an evaluation of current intersection operation based on existing traffic volumes during the weekday PM and weekend PM peak periods. This condition does not include project-generated traffic volumes.

Under Existing Conditions, all intersections operate within acceptable levels of service. A summary of the intersection level of service calculations is contained in Table IV.B-3 and copies of the Level of Service calculations are provided in Appendix E.

Table IV.B-3: Existing No Project Peak Hour Intersection Levels of Service

Study Intersection		Weekday PM Peak		Weekend PM Peak	
Approach	Control	Delay	LOS	Delay	LOS
1. Cedar St/Arroyo Ave	AWSC	11.1	B	8.7	A
2. Chestnut St/Arroyo Ave	UC	10.9	B	9.3	A
Westbound (Arroyo) Approach		*12.3*	*B*	*10.3*	*B*
3. Chestnut St/Baytree Rd	UC	2.2	A	1.6	A
Westbound (Baytree) Approach		*9.3*	*A*	*8.8*	*A*
4. Woodland Ave/Morse Blvd	UC	3.0	A	1.6	A
Westbound (Morse) Approach		*9.1*	*A*	*8.8*	*A*
5. Woodland Ave/Aster Rd	UC	1.2	A	1.2	A
Westbound (Aster) Approach		*9.3*	*A*	*8.7*	*A*
6. Cedar St/Brittan Ave	AWSC	27.7	D	14.9	B
7. Woodland Ave/Brittan Ave	TWSC	0.9	A	1.2	A
Northbound (Woodland) Approach		*17.3*	*C*	*15.7*	*B*
8. Elston Ct/Coleman Ct	UC	5.2	A	4.6	A
Southbound (Elston) Approach		*8.4*	*A*	*8.5*	*A*
9. Aberdeen Dr/Dundee Ln	UC	8.2	A	7.7	A
Northbound (Aberdeen) Approach		8.4	A	8.3	A
10. Aberdeen Dr/Glasgow Ln	TWSC	0.9	A	1.1	A
Westbound (Glasgow) Approach		*10.5*	*B*	*9.3*	*A*
11. Aberdeen Dr-Hewitt Dr/Melendy Dr	AWSC	11.6	A	8.3	A
12. Melendy Dr/Alameda de las Pulgas	AWSC	16.7	C	12.2	B

Notes: Delay is measured in average seconds per vehicle
AWSC = All-Way Stop-Controlled
TWSC = Two-Way Stop-Controlled
UC = Uncontrolled
LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections or worst approaches at uncontrolled intersections are indicated in *italics*.
Source: W-Trans. 2017. August 18.

(2) Near-Term Conditions. The Near-Term Conditions represents a short-term horizon year of 2019, which is the assumed completion date for the lighting project. The Near-Term Conditions includes regional traffic growth that would be generated by other projects in San Carlos and surrounding communities.

A growth rate based on the C/CAG Travel Forecast Model was applied to account for growth in regional traffic until the horizon year of 2019. The growth rate applied was 1.15 percent per year (added to the existing volumes) for both the weekday PM and weekend PM peak hour volumes.

Under the Near-Term conditions, all intersections would continue to operate within acceptable levels of service. These results are summarized in Table IV.B-4, and Near-Term volumes are shown in Figure IV.B-3.

Table IV.B-4: Near-Term No Project Peak Hour Intersection Levels of Service

Study Intersection *Approach*	Control	Weekday PM Peak		Weekend PM Peak	
		Delay	LOS	Delay	LOS
1. Cedar St/Arroyo Ave	AWSC	11.4	B	8.9	A
2. Chestnut St/Arroyo Ave	UC	11.1	B	9.4	A
Westbound (Arroyo) Approach		*12.5*	*B*	*10.3*	*B*
3. Chestnut St/Baytree Rd	UC	2.3	A	1.8	A
Westbound (Baytree) Approach		*9.3*	*A*	*8.8*	*A*
4. Woodland Ave/Morse Blvd	UC	3.1	A	1.8	A
Westbound (Morse) Approach		*9.2*	*A*	*8.9*	*A*
5. Woodland Ave/Aster Rd	UC	1.3	A	1.4	A
Westbound (Aster) Approach		*9.3*	*A*	*8.7*	*A*
6. Cedar St/Brittan Ave	AWSC	32.1	D	15.7	B
7. Woodland Ave/Brittan Ave	TWSC	1.1	A	1.3	A
Northbound (Woodland) Approach		*18.0*	*C*	*16.4*	*B*
8. Elston Ct/Coleman Ct	UC	4.9	A	4.4	A
Southbound (Elston) Approach		*8.5*	*A*	*8.5*	*A*
9. Aberdeen Dr/Dundee Ln	UC	8.2	A	7.7	A
Northbound (Aberdeen) Approach		*8.4*	*A*	*8.4*	*A*
10. Aberdeen Dr/Glasgow Ln	TWSC	1.0	A	1.2	A
Westbound (Glasgow) Approach		*10.6*	*B*	*9.3*	*A*
11. Aberdeen Dr-Hewitt Dr/Melendy Dr	AWSC	12.0	A	8.4	A
12. Melendy Dr/Alameda de las Pulgas	AWSC	17.6	C	12.5	B

Notes: Delay is measured in average seconds per vehicle
AWSC = All-Way Stop-Controlled
TWSC = Two-Way Stop-Controlled
UC = Uncontrolled
LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections or worst approaches at uncontrolled intersections are indicated in *italics*.
Source: W-Trans. 2017. August 18.

(3) Cumulative (Year 2040) Conditions. A growth rate based on the C/CAG Travel Forecast Model, most recently updated and revised during the General Plan Update, was applied to account for growth in regional traffic until the horizon year of 2040. The growth rate applied was 1.15 percent per year (added to the existing volumes) for both the weekday PM and weekend PM peak hour volumes. For the Cumulative Conditions, this study assumed no capital improvements or geometric changes at any of the study intersections.

Under the Cumulative Conditions, all the study intersections would operate at acceptable levels of service with the exception of Cedar Street/Brittan Avenue. This intersection is expected to operate below the acceptable standard at LOS F with 96.4 seconds of delay. Operating conditions are summarized in Table IV.B-5 and future volumes are shown in Figure IV.B-4.

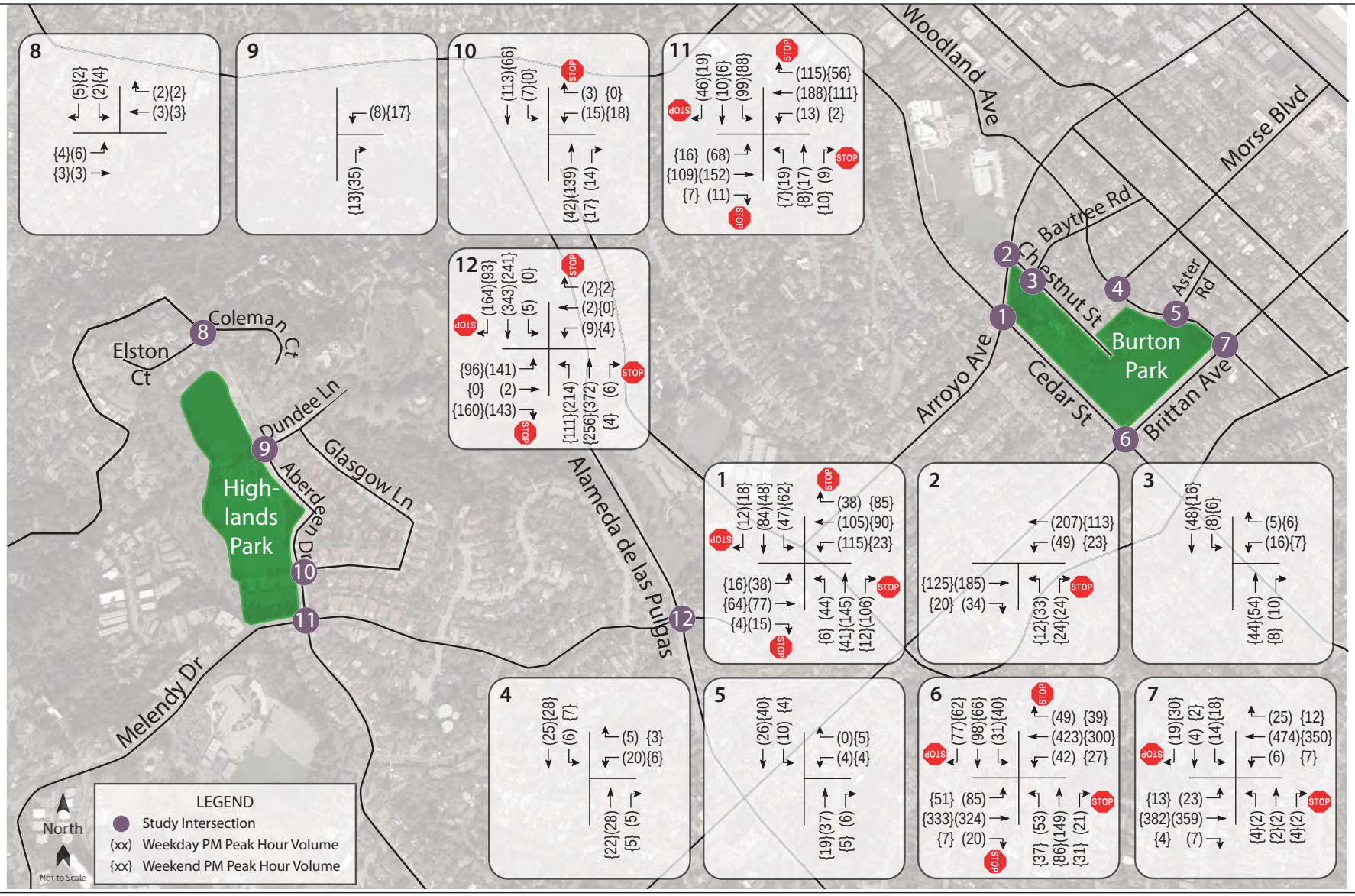

FIGURE IV.B-3

LSA

NOT TO SCALE

Burton/Highlands Parks Project EIR

Near-Term No Project Traffic Volumes

SOURCE: W-TRANS, AUGUST 18, 2017.

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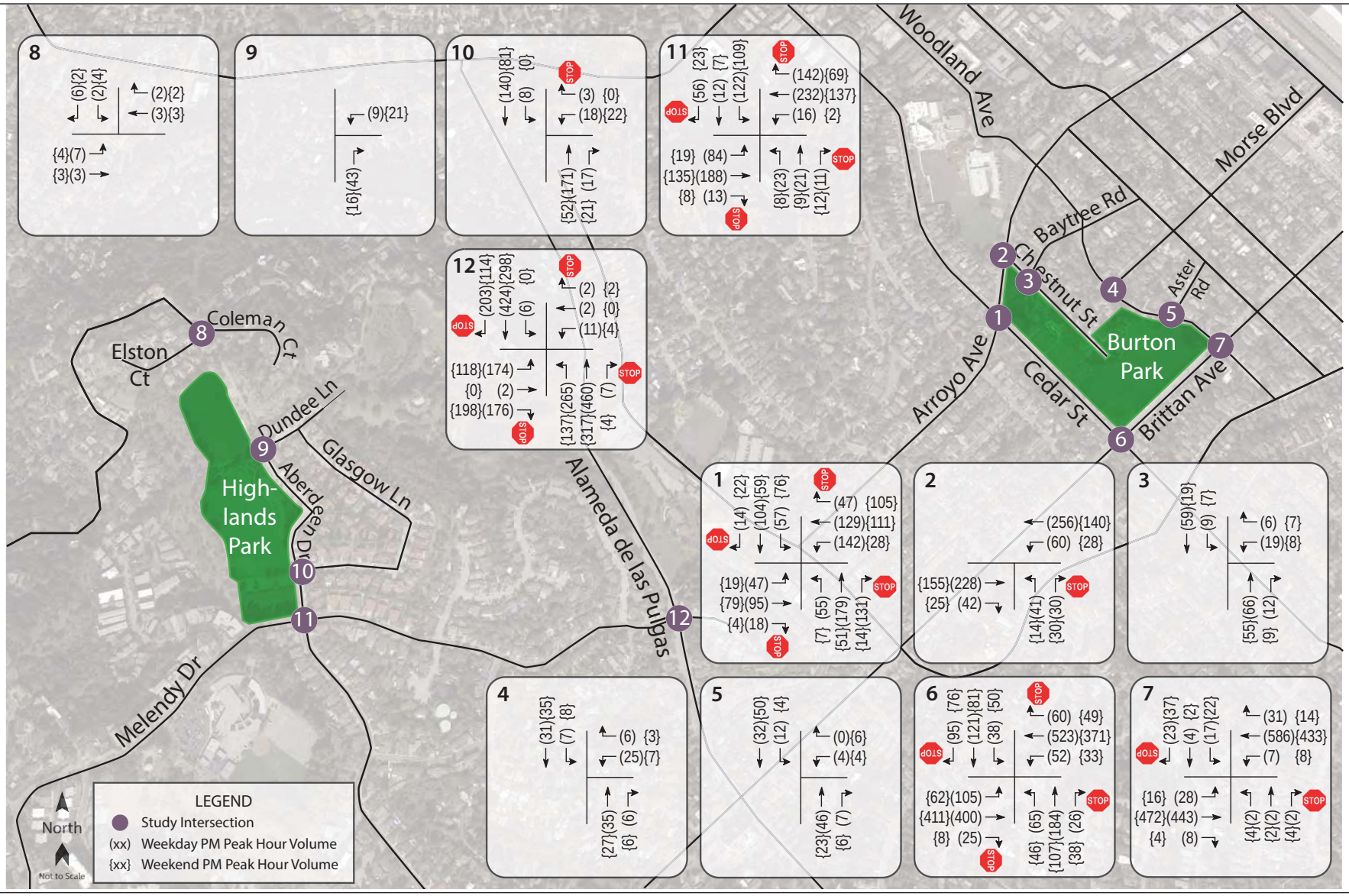

LSA

FIGURE IV.B-4

NOT TO SCALE

Burton/Highlands Parks Project EIR

Cumulative No Project 2040 Traffic Volumes

SOURCE: W-TRANS, AUGUST 18, 2017.

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Table IV.B-5: Cumulative 2040 Peak Hour Intersection Levels of Service

Study Intersection *Approach*	Control	Weekday PM Peak		Weekend PM Peak	
		Delay	LOS	Delay	LOS
1. Cedar St/Arroyo Ave	AWSC	13.2	B	8.9	A
2. Chestnut St/Arroyo Ave	UC	12.0	B	9.5	A
Westbound (Arroyo) Approach		*13.9*	*B*	*10.5*	*B*
3. Chestnut St/Baytree Rd	UC	2.2	A	1.8	A
Westbound (Baytree) Approach		*9.4*	*A*	*8.8*	*A*
4. Woodland Ave/Morse Blvd	UC	3.0	A	1.7	A
Westbound (Morse) Approach		*9.0*	*A*	*8.8*	*A*
5. Woodland Ave/Aster Rd	UC	1.2	A	1.2	A
Westbound (Aster) Approach		*9.1*	*A*	*8.6*	*A*
6. Cedar St/Brittan Ave	AWSC	**96.4**	**F**	24.2	C
7. Woodland Ave/Brittan Ave	TWSC	1.2	A	1.4	A
Southbound (Woodland) Approach for weekday; Northbound (Woodland) Approach for weekend		*20.7*	*C*	*17.5*	*C*
8. Elston Ct/Coleman Ct	UC	5.1	A	4.4	A
Southbound (Elston) Approach		*8.4*	*A*	*8.5*	*A*
9. Aberdeen Dr/Dundee Ln	UC	8.2	A	7.7	A
Northbound (Aberdeen) Approach		*8.4*	*A*	*8.3*	*A*
10. Aberdeen Dr/Glasgow Ln	TWSC	0.9	A	1.2	A
Westbound (Glasgow) Approach		*10.5*	*B*	*9.3*	*A*
11. Aberdeen Dr-Hewitt Dr/Melendy Dr	AWSC	11.7	B	8.7	A
12. Melendy Dr/Alameda de las Pulgas	AWSC	26.7	D	13.6	B

Notes: Delay is measured in average seconds per vehicle
AWSC = All-Way Stop-Controlled
TWSC = Two-Way Stop-Controlled
UC = Uncontrolled
LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections or worst approaches at uncontrolled intersections are indicated in *italics*; Intersections that exceed the LOS standard are identified by **bold text.**
Source: W-Trans. 2017. August 18.

d. Alternative Modes of Transportation. The following section generally describes the key facilities of the bicycle and pedestrian network and transit services in the vicinity of the project sites.

(1) Existing Bicycle Facilities. Bicycle racks are provided at the youth center and at Flanagan Field at Burton Park. These bicycle racks can accommodate at least 30 bicycles. In addition to these bicycle racks, casual bicycle parking was observed to occur at many locations throughout the park.

Highlands Park does not provide formal bicycle racks. However, casual bicycle parking was observed to be occurring at various locations throughout the park.

The Highway Design Manual, California Department of Transportation (Caltrans), 2012, classifies bikeways into three categories:

- *Class I Multi-Use Path* – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- *Class II Bike Lane* – a striped and signed lane for one-way bike travel on a street or highway.

- *Class III Bike Route* – signing only for shared use with motor vehicles within the same travel lane on a street or highway.

Guidance for Class IV Bikeways is provided in Design Information Bulletin Number 89: Class IV Bikeway Guidance (Separated Bikeways/Cycle Tracks), Caltrans, 2015.

- *Class IV Bikeway* – also known as a separated bikeway, a Class IV Bikeway is for the exclusive use of bicycles and includes a separation between the bikeway and the motor vehicle traffic lane. The separation may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

In the project area, Class II bike lanes exist on Brittan Street between Alameda de las Pulgas and Laurel Street, and on Alameda de las Pulgas between San Carlos Avenue and Eaton Avenue. Bicyclists ride in the roadway and/or on sidewalks along all other streets within the project study area.

Table IV.B-6 summarizes the existing bicycle facilities in the project vicinity, as contained in the City of San Carlos Bicycle Transportation Plan (2012). According to this publication, no other bicycle facilities are proposed within the study area.

Table IV.B-6: Summary of Existing Bicycle Facilities

Status Facility	Class	Length (miles)	Begin Point	End Point
Brittan Ave	II	0.8	Laurel St	Alameda de las Pulgas
Alameda de las Pulgas	II	1.5	San Carlos Ave	Eaton Ave
Cedar St	III	1.8	Eaton Ave	Hull Dr
Arroyo Ave	III	0.8	El Camino Real	Tamarack Ave

Notes: All or portions of these bikeways are located within the City of San Carlos
Source: *City of San Carlos Bicycle Transportation Plan*, 2012

(2) Existing Pedestrian Facilities. Pedestrian facilities include sidewalks, crosswalks, curb ramps, and various streetscape amenities such as lighting, benches, etc. In general, a network of sidewalks, crosswalks, and curb ramps provide access for pedestrians in the vicinity of the proposed project sites. However, sidewalk gaps, obstacles, and barriers can be found along some of the roadways in the vicinity of the project sites. The following list identifies the existing pedestrian network as well as gaps and obstacles along the connecting roadways that effect convenient and continuous access for pedestrians, and may present safety concerns in those locations:

- *Brittan Avenue, Arroyo Avenue, Morse Boulevard, Aster Road and Cedar Avenue* – Continuous sidewalks are provided on both sides of Brittan Avenue and Cedar Avenue within the project study area. Street lights are provided on this road. Curb ramps and crosswalks at intersections are compliant with current ADA standards.
- *Chestnut Street* – Continuous sidewalks are provided on one side of Chestnut Street between Arroyo Avenue and the end of Chestnut Street. Sidewalks are not provided on the east side of the street. There are no street lights on this road.
- *Woodland Avenue* – No sidewalks are provided on Woodland Avenue between Baytree Road and Aster Road. In general, Woodland Avenue is a narrow local street that provides access to residences and Burton Park. Sidewalks and street lights are generally not provided along this local street.

- *Baytree Road* – No sidewalks are provided on Baytree Road between Woodland Avenue and Chestnut Street. In general, Baytree Road is a narrow local street that provides access to residences and Burton Park. Sidewalks and street lights are generally not provided along this local street.
- *Aderdeen Drive* – Continuous sidewalks are provided on both sides of Aderdeen Drive through the study area. ADA curb ramps without crosswalks are provided along the eastern sidewalk at the intersection with Glasgow Lane. Located just south of the intersection with Glasgow Lane is the driveway access to Parking Lot B that serves the tennis courts and sports fields. The ADA curb ramp located at the south-eastern corner lines up with the driveway access to Parking Lot B. In general, Aderdeen Drive is a local street that provides access to residences and Highlands Park.
- *Glasgow Lane* -- Continuous sidewalks are provided on one side of Glasgow Lane through the study area. Sidewalks are not provided on the west side of the street. In general, Glasgow Lane is a local street that provides access to residences.
- *Melendy Drive* -- Continuous sidewalks are provided on both sides of Melendy Drive through the study area. In general, Melendy Drive is a collector street that provides access to residences and Alameda de las Pulgas.
- *Elston Court/Coleman Court* – Continuous sidewalks are provided on both sides of Elston Court and Coleman Court. In general, Elston Court and Coleman Court is a narrow local street that provides access to residences and the Upper Stadium of Highlands Park.

(3) Existing Transit Service. SamTrans provides multiple fixed route bus service in the City of San Carlos. Routes 61 and 95 operate on school days near the project sites and provide service to destinations all throughout the City. The transit service provided in the study area is described below and shown in Figure IV.B-5.

Route 61 operates only on school days with approximately 15-minute headways between 7:00 a.m. and 9:00 a.m. and afternoon service from 1:00 p.m. to 4:00 p.m. Route 61 generally operates between Ralston Avenue, the San Carlos Caltrans Station and Crestview Drive via Melendy Drive, Alameda de las Pulgas and San Carlos Avenue.

Route 95 operates on school days only and provides service between the Redwood City Transit Center and Belmont via El Camino Real, Brittan Avenue, Cedar Avenue and San Carlos Avenue. Route 95 operates a single bus in the morning that departs from the Redwood City Transit Center at 7:50 a.m. and then another single bus operates in the afternoon which leaves the Belmont City Library at 3:00 p.m. on each school day.

The nearest bus stop for Burton Park is located directly adjacent to Flanagan Field on Cedar Street between Brittan Avenue and Arroyo Avenue. The nearest bus stop serving Highlands Park is located approximately 0.2 miles from the park along Melendy Drive between Aberdeen Drive and Heather Drive.

Caltrain provides commuter heavy rail service between San Francisco County and Santa Clara County. The nearest Caltrain station to the project site is the San Carlos Station located at 599 El Camino Real which is approximately 0.7 miles from Burton Park and 1.1 miles from Highlands Park.

Train service is provided at this station with both northbound and southbound trains with 1-hour headways from 8:00 p.m. to 11:00 p.m.

e. Existing Parking Conditions. The traffic analysis also includes an evaluation of parking conditions on-site and on the adjacent residential streets. The project was analyzed to determine whether the proposed parking supply would be sufficient for the anticipated parking demand. Off-site parking for both parks is shared by the single-family homes on surrounding streets. A parking use survey was conducted on April 19 and 22, 2017, from 4:00 p.m. to 8:00 p.m. while programmed recreation was occurring. The parking utilization survey was conducted at the following locations and included both off-street parking lots serving each park, as well as on-street parking along adjacent streets:

Burton Park

1. Burton Park parking lot at south end of Chestnut Street
2. Cedar Street between Brittan Avenue and Arroyo Avenue
3. Arroyo Avenue between Cedar Street and Chestnut Street
4. Chestnut Street between Arroyo Avenue and Burton Park parking lot
5. Baytree Road between Chestnut Street and Woodland Avenue
6. Woodland Avenue between Baytree Road and Brittan Avenue
7. Morse Boulevard between Woodland Avenue and Rosewood Avenue
8. Aster Road between Woodland Avenue and Rosewood Avenue
9. Brittan Avenue between Cedar Street and Woodland Avenue

Highlands Park

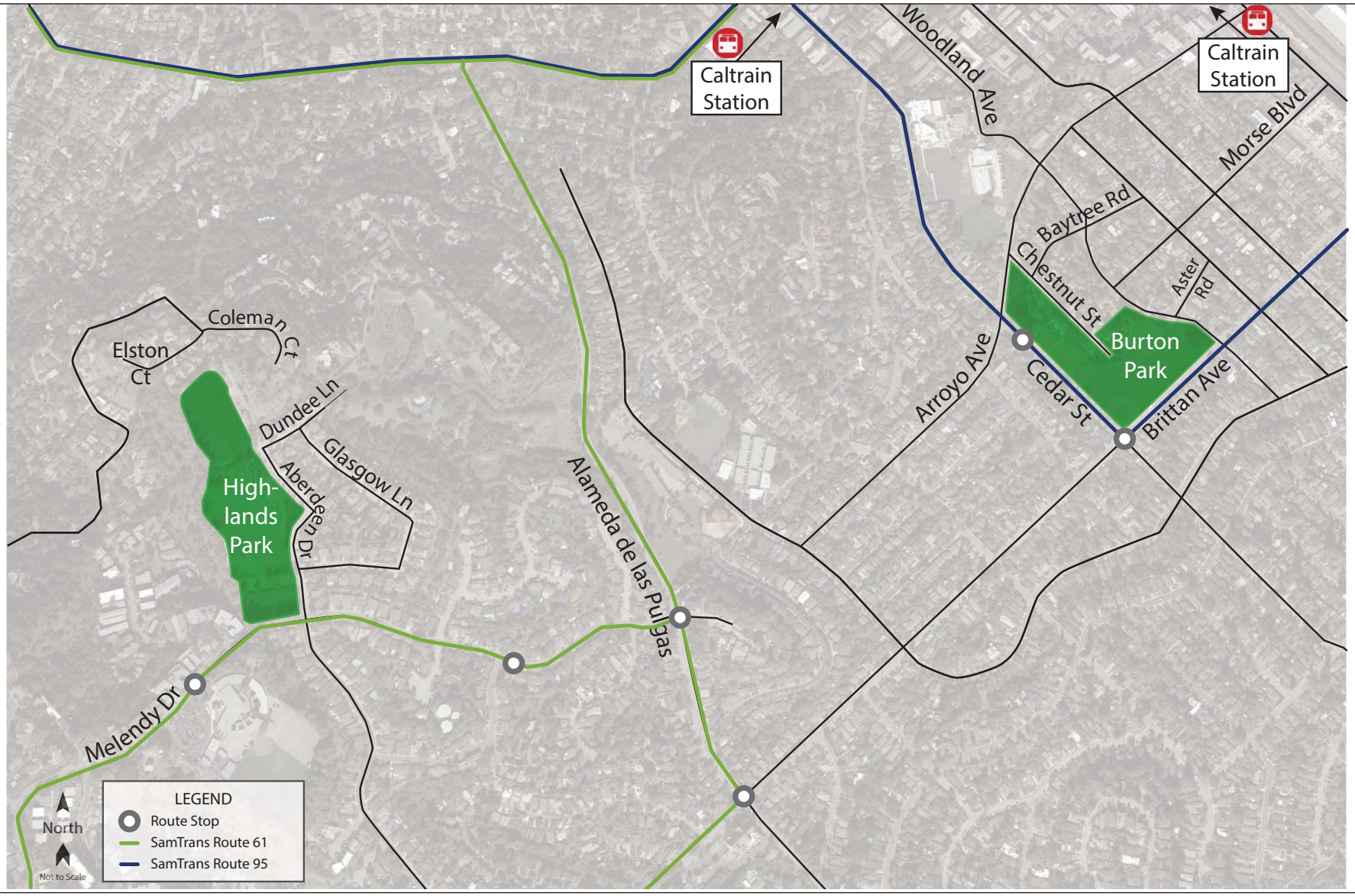
10. Highlands Park south parking lot near tennis courts
11. Highlands Park north parking lot near North Baseball Diamond
12. Melendy Drive between Aberdeen Drive and Torino Drive
13. Aberdeen Drive between Melendy Drive and Dundee Lane
14. Glasgow Lane between Aberdeen Drive and Dundee Lane
15. Dundee Lane between Aberdeen Drive and the eastern end of Dundee Lane

The existing parking supply is shown in Table IV.B-7. A copy of the detailed parking survey results are provided in Appendix E.

Table IV.B-7: Parking Analysis Summary

Location (period)	Off-Street Supply (spaces)	On-Street Supply (spaces)	Existing Parking Utilization		
			Peak # Off-Street Occupied (spaces)	Peak # On-Street Occupied (spaces)	Peak # Available (spaces)
Weekday					
Burton Park	35	389	17	173	234
Highlands Park	96	297	87	84	222
Weekend					
Burton Park	35	389	35	209	180
Highlands Park	96	297	61	128	204

Notes: Parking Utilization Survey conducted in April 19 and 22 2017 (4:00 p.m. to 8:00 p.m.)
Source: W-Trans. 2017. August 18.



LSA

FIGURE IV.B-5

NOT TO SCALE

Burton/Highlands Parks Project EIR

Existing Transit Routes

SOURCE: W-TRANS, AUGUST 23, 2017.

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVB5.ai (8/30/17)

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f. Regulatory Context. The following is a summary of State, regional, County, and City regulations that apply to transportation and circulation within the study area. All study intersections are under the jurisdiction of the City of San Carlos.

(1) State Regulations. California Department of Transportation (Caltrans) responsibilities include the planning, design, construction, and maintenance of interstate freeways as wells as State highways. Within this study area, US 101, I-280 and El Camino Real (SR-82) falls under Caltrans jurisdiction. The Caltrans Guide for the Preparation of Traffic Impact Studies[1] identifies the information that Caltrans requires in evaluating the effect of local development and land use changes on State highway facilities.

(2) Senate Bill 743. On September 27, 2013, Governor Brown signed Senate Bill (SB) 743. Among other things, SB 743 creates a process to change the way transportation impacts are analyzed under CEQA (Public Resources Code section 21000 and following). Currently, environmental review of transportation impacts focuses on the "delay" that vehicles experience at intersections and on roadway segments. Delay is often measured using "level of service," or LOS as described previously. Mitigation for increased delay associated with a new project often involves increasing capacity (i.e., the width of a roadway or size of an intersection), which may increase auto use and emissions and discourage alternative forms of transportation. Under SB 743, the focus of transportation analysis will shift from driver delay to reduction of greenhouse gas emissions, creation of multimodal networks and promotion of a mix of land uses. Because the draft guidelines are not adopted, the changes proposed in SB 743 do not currently apply to this project.

(3) Metropolitan Transportation Commission. The Metropolitan Transportation Commission (MTC) is the transportation planning, coordinating, and financing agency for the nine-county San Francisco Bay Area. The MTC functions as both the State-mandated regional transportation planning agency and the federally-mandated metropolitan planning organization (MPO) for the region. As such, it is responsible for regularly updating the Regional Transportation Plan, a comprehensive blueprint for the development of transportation facilities within the region. The Commission also screens requests from local agencies for State and federal grants for transportation projects to determine their compatibility with the Plan.

(4) City/County Association of Governments of San Mateo County. The City/County Association of Governments of San Mateo County (C/CAG) is a regional planning agency involved with various public services, including transportation. In this role, the CMA makes decisions on what local projects can utilize federal and State funding. The CMA prepares, adopts and updates the County's CMP, last updated in November 2015.

(5) Local Regulations. The City of San Carlos General Plan was adopted in October 2009. The General Plan provides the fundamental basis for the City's land use and development policy, and represents the basic community values, ideals and aspirations to govern a shared environment over the life of the General Plan. The transportation goals outlined in the plan include developing a

[1] California Department of Transportation, 2002. *Guide for the Preparation of Traffic Impact Studies*. Available online at nacto.org/docs/usdg/guide_preparation_traffic_impact_studies_caltrans.pdf (accessed August 28, 2017). December.

circulation system that is safe, environmentally-friendly and responsive to the needs of various land uses planned within the City of San Carlos.

2. Impacts and Mitigation Measures

The following section presents a discussion of the impacts related to transportation and circulation that could result from implementation of the proposed project. The section begins with the criteria of significance, which establish the thresholds to determine whether an impact is significant. The latter part of this section presents the impacts related to the proposed project.

a. Criteria of Significance. According to the City of San Carlos 2030 General Plan, a project would have a significant impact on transportation if any of the following conditions occurs:

- At an intersection, peak hour level of service degrades from an acceptable mid LOS D or better under future conditions to an unacceptable high LOS D, LOS E or LOS F under project conditions;
- On a CMP freeway segment, peak hour level of service is an acceptable LOS E under existing conditions, and the addition of project traffic causes the level of service to degrade to LOS F; or, if the segment is currently operating at an unacceptable LOS F, the project adds traffic to the segment representing 1 percent or more of the segment's capacity. (Note: this significance threshold represents what would be a perceptible traffic increase to motorists on the freeway.);
- For signalized intersections (based on V/C ratios):
    - If a signalized intersection operates at an acceptable LOS (i.e., equal to or better than mid-range LOS D) without the project and degrades to an unacceptable LOS (i.e., worse than mid-range LOS D) with the project, then it is a potentially significant impact;
    - If the signalized intersection operates at an unacceptable LOS (i.e., worse than mid-range LOS D) without the project and the intersection continues to operate unacceptably with the project, the project impact would be determined to be potentially significant if the addition of project traffic causes the volume-to-capacity ratio to increase by more than 0.01 (1 percent); or
- For unsignalized intersections (based on intersection delay):
    - If an unsignalized intersection operates at an acceptable LOS (i.e., LOS D or better) without the project and degrades to an unacceptable LOS (i.e., LOS E or worse) with the project then it is a potentially significant impact;
    - If the unsignalized intersection operates at an unacceptable LOS (i.e., LOS E or worse) without the project and the intersection continues to operate unacceptably with the project, then it is a potentially significant impact if the change in delay from the baseline no project to the plus project conditions is equal to or greater than five (5) seconds of delay AND the intersection meets the peak hour signal warrant (Warrant 3) as defined in the California MUTCD;
- Air traffic patterns change either by an increase in traffic levels or a change in location that results in substantial safety risks;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access;

- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks); or
- Result in inadequate parking capacity.

Consistent with the LOS definitions in the General Plan and standard City practice when analyzing intersections, the intersection LOS significance thresholds are applied to the overall operation of the entire intersection, and individual vehicle movements are not specified.

The San Carlos Airport, which is the closest airport to the project area, is located approximately 1.1 miles to the northeast from Burton Park and 1.7 miles east from Highlands Park. Implementation of the project (installation of new field lights) would have no effect on air traffic patterns leading to a safety risk as the proposed project would not include any tall buildings or other hazards that would affect the operation of air traffic patterns.

b. Project Conditions Analysis. The following includes an analysis of potential project impacts. The discussion begins with a description of the proposed project trip estimates, trip generation, and trip distribution and assignment. The amount of traffic associated with a project is estimated using a three-step process: 1) trip generation; 2) trip distribution; and 3) trip assignment.

Trip generation is the process of predicting the number of peak-hour trips a proposed development would contribute to the roadways, and whether these trips would be entering or exiting the site. After the number of trips is determined, the distribution process predicts the direction these trips use to approach and depart the site, from a regional perspective. Trip assignment involves determining which specific roadways a vehicle would use to travel between its origin and destination. These procedures are described further below.

(1) Trip Generation. Trip generation estimates are typically developed using standard rates published by the Institute of Transportation Engineers (ITE) in Trip Generation Manual, 9th Edition, 2012. However, standard rates are not available or applicable to the lighting improvements planned at the parks; therefore, trip generation rates were developed based on anticipated future programing and expected user behavior as described in Chapter III, Project Description.

An average vehicle occupancy of 1.2 persons per vehicle (for adult sporting events) and 2.0 persons per vehicle (for youth sporting events) was used to convert the average daily visitor total into average daily weekday and average daily weekend trips. In order to account for seasonal variation, these daily trips were averaged over 365 days to determine the number of daily trips the project would generate.

Trip generation estimates are presented in Table IV.B-8. Overall, the addition of park lighting would generate an average of 181 weekday daily trips, 237 weekend daily trips, 92 weekday PM peak hour trips and 122 Saturday PM peak hour trips.

Table IV.B-8: Trip Generation Summary

Park Location (With Lighting)	Daily Trips		Weekday PM Peak Hour			Weekend PM Peak Hour		
	Weekday	Weekend	Trips	In	Out	Trips	In	Out
Burton Park	94	123	48	24	24	64	32	32
Highlands Park	87	114	44	22	22	58	29	29
Total	**181**	**237**	**92**	**46**	**46**	**122**	**61**	**61**

Source: W-Trans, 2017. August 18.

(2) Trip Distribution and Assignment. The project is sponsored by the City of San Carlos Parks & Recreation Department. It was assumed that a majority of project trips would originate locally in San Carlos and the immediate surrounding cities. Traffic would primarily use local streets and very few users would travel via US 101, SR-82, or Interstate 280 (I-280) to access the park. The C/CAG Travel Demand Model was used to estimate relative trip distribution patterns within the study area by comparing relative vehicle demands at major roadways within the City and then applying manual adjustments based on professional judgment and knowledge of the area. The applied distribution assumptions were confirmed by City of San Carlos staff[2] and the resulting trips are shown in Table IV.B-9. Project peak hour traffic volumes at each study intersection are shown in Figure IV.B-6.

Table IV.B-9: Existing Plus Project Peak Hour Trip Distribution

Route	Percent	Daily Trips		Peak Hour PM Trips	
		Weekday	Weekend	Weekday	Weekend
To/From the north via Alameda de las Pulgas	25	45	59	23	31
To/From the south via Cedar St	8	14	19	7	10
To/From the south via Alameda de las Pulgas	40	73	95	37	49
To/From the east via Brittan Ave	10	18	24	9	12
To/From the east via Arroyo Ave	2	4	5	2	2
To/From the west via Brittan Ave	15	27	35	14	18
Total	**100**	**181**	**237**	**92**	**122**

Source: W-Trans. 2017. August 18.

c. Project Impacts. The proposed project's potential to result in transportation and circulation related impacts is discussed below. This impact assessment applies to both project sites, unless otherwise noted.

(1) Circulation System Performance. The proposed project's potential for impacts related to the significance criteria is discussed below.

[2] Forouhi, Kaveh, PE, TE, QSD/QSP, Senior Engineer, City of San Carlos Public Works Department. 2017. Unpublished communication to Mark Spencer, W-Trans. July 27.

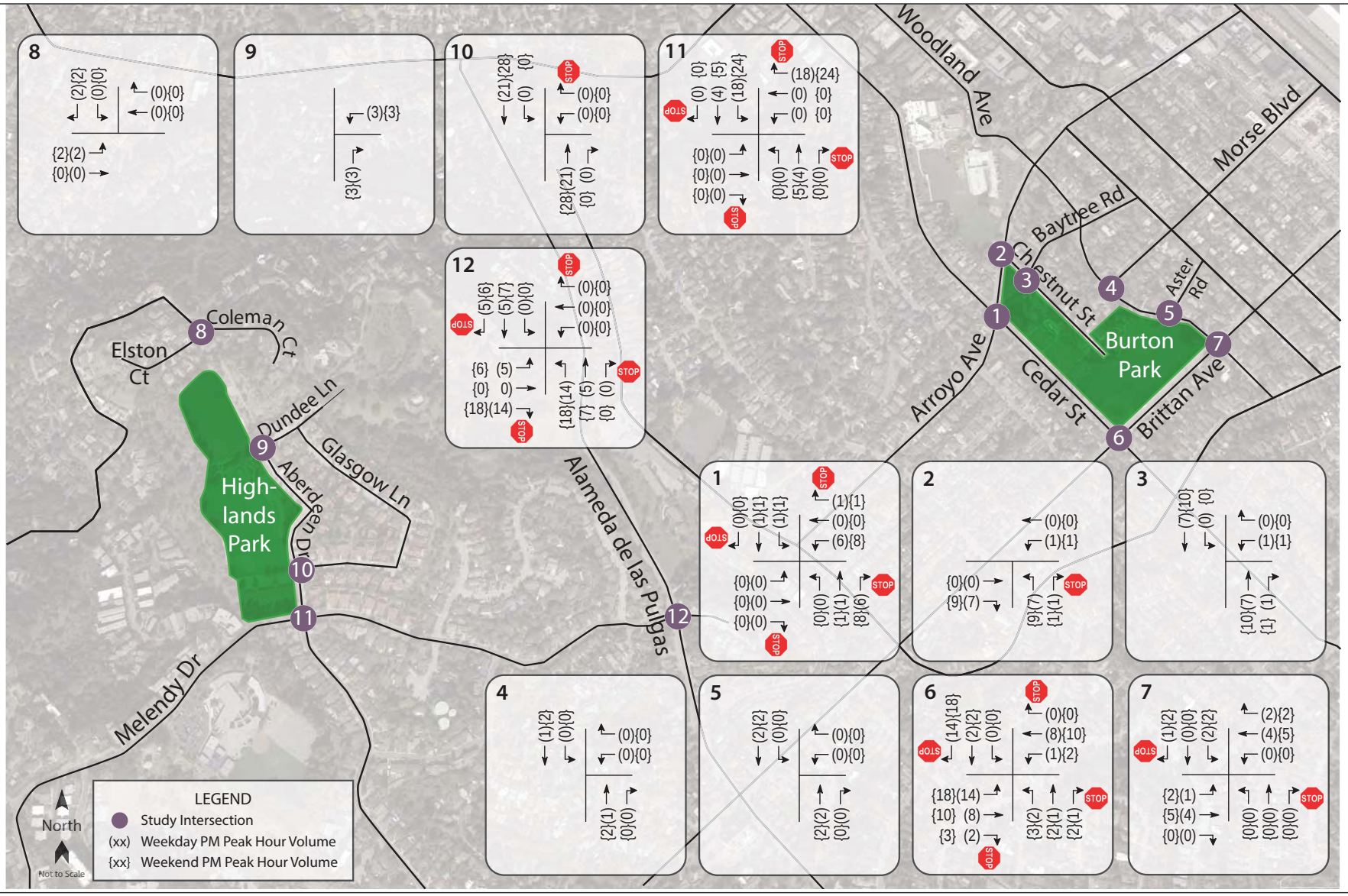

FIGURE IV.B-6

LSA

NOT TO SCALE

Burton/Highlands Parks Project EIR

Project Traffic Volumes

SOURCE: W-TRANS, AUGUST 18, 2017.

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Near-Term Plus Project Intersection Analysis. Upon the addition of project-generated traffic to the Near-Term volumes, all the study intersections would continue to operate at acceptable levels of service, with the exception of Cedar Street/Brittan Avenue. This intersection is expected to operate below the acceptable standard at LOS E with 40.0 seconds of delay. These results are summarized in Table IV.B-10. Near-Term Plus Project traffic volumes are shown in Figure IV.B-7. The Cedar Street/Brittan Avenue intersection also satisfies the peak hour traffic signal warrant in the Near-Term Plus Project Condition as described in Chapter 4C of the California Manual on Uniform Traffic Control Devices (CA-MUTCD) for the weekday PM peak hour. A copy of the Warrant 3 worksheet is provided in Appendix E.

Table IV.B-10: Near-Term Plus Project Peak Hour Intersection Levels of Service

Study Intersection		**Weekday PM Peak**		**Weekend PM Peak**	
Approach	**Control**	**Delay**	**LOS**	**Delay**	**LOS**
1. Cedar St/Arroyo Ave	AWSC	11.6	B	9.0	A
2. Chestnut St/Arroyo Ave	UC	11.3	B	9.5	A
Westbound (Arroyo) Approach		*12.9*	*B*	*10.6*	*B*
3. Chestnut St/Baytree Rd	UC	2.1	A	1.6	A
Westbound (Baytree) Approach		*9.4*	*A*	*9.0*	*A*
4. Woodland Ave/Morse Blvd	UC	3.0	A	1.7	A
Westbound (Morse) Approach		*9.2*	*A*	*8.9*	*A*
5. Woodland Ave/Aster Rd	UC	1.3	A	1.3	A
Westbound (Aster) Approach		*9.4*	*A*	*8.7*	*A*
6. Cedar St/Brittan Ave	AWSC	**40.0**	**E**	18.1	C
	Signal	10.4	B	9.7	A
	Mini-Rndbt	9.0	A	6.7	A
7. Woodland Ave/Brittan Ave	TWSC	10.4	B	9.7	A
Northbound (Woodland) Approach		1.2	A	1.4	A
8. Elston Ct/Coleman Ct	UC	*18.4*	*C*	*16.7*	*C*
Southbound (Elston) Approach		5.4	A	5.1	A
9. Aberdeen Dr/Dundee Ln	UC	*8.5*	*A*	*8.5*	*A*
Northbound (Aberdeen) Approach		8.2	A	7.8	A
10. Aberdeen Dr/Glasgow Ln	TWSC	*8.5*	*A*	*8.4*	*A*
Westbound (Glasgow) Approach		0.9	A	0.9	A
11. Aberdeen Dr-Hewitt Dr/Melendy Dr	AWSC	*11.0*	*B*	*9.7*	*A*
12. Melendy Dr/Alameda de las Pulgas	AWSC	12.8	B	8.8	A

Notes: Delay is measured in average seconds per vehicle
AWSC = All-Way Stop-Controlled
TWSC = Two-Way Stop-Controlled
UC = Uncontrolled
Mini-Rndbt = Mini-Roundabout
LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections or worst approaches at uncontrolled intersections are indicated in *italics*; **Bold** text = deficient operation; Shaded cells = conditions with recommended improvements
Source: W-Trans. 2017. October.

<u>Impact TRA-1</u>: During the weekday PM peak period, the addition of project-generated traffic in the Near-Term Condition would result in a significant impact at the intersection of Cedar Street/Brittan Avenue. All other study intersections would continue operating at acceptable levels of service with project-generated traffic. (S)

In the Near-Term no project condition, Cedar Street/Brittan Avenue would operate at an acceptable LOS D under weekday PM peak conditions. With the addition of project traffic, operation of the intersection would degrade to a LOS E in the Near-Term Condition which is a significant impact. The Cedar Street/Brittan Avenue intersection also satisfies a Caltrans peak hour traffic signal warrant. Either of the following two mitigation measures would reduce the impact to a less-than-significant level. As with other capital improvement projects, the City of San Carlos will review the design, operations and cost of each proposed measure for reducing the significant impact at the Cedar Street/Brittan Avenue intersection prior to making a final decision on which measure to implement.

Mitigation Measure TRA-1: To achieve acceptable intersection operation under Near-Term plus Project Conditions, the City shall implement one of the following measures:

- Convert the Cedar Street/Brittan Avenue intersection from an all-way-stop controlled intersection to a traffic signal controlled intersection, or
- Convert the Cedar Street/Brittan Avenue intersection from an all-way-stop controlled intersection to a mini-roundabout. (LTS)

With construction of a traffic signal at Cedar Street/Brittan Avenue, this intersection would operate at LOS B with 10.4 seconds of delay during the weekday PM peak hour, therefore implementation of this mitigation would reduce the impact to a less-than-significant level.

With conversion of the Cedar Street/Brittan Avenue intersection from an all-way-stop controlled intersection to a mini-roundabout, the intersection would operate at LOS A with 9.0 seconds of delay during the weekday PM peak hour, and therefore implementation of this mitigation would also reduce the impact to a less-than-significant level.

Cumulative Plus Project Intersection Analysis. For the Cumulative Plus Project Conditions, this study assumed no capital improvements or geometric changes at any of the study intersections. Upon the addition of project-generated traffic to the projected Cumulative Conditions volumes, all the study intersections would continue to operate at acceptable levels of service, with the exception of Cedar Street/Brittan Avenue. This intersection is expected to operate below the acceptable standard at LOS F with 109.2 seconds of delay. This intersection also satisfies the peak hour traffic signal warrant. The intersection of Melendy Drive/Alameda de las Pulgas would operate at a mid-range LOS D (29.0 seconds of delay) with the addition of project-generated traffic which is an acceptable LOS per the significance criteria and the additional project-related delay would not constitute a significant impact. The Cumulative 2040 Plus Project operating conditions are summarized in Table IV.B-11. Cumulative Plus Project traffic volumes are shown in Figure IV.B-8.

Impact TRA-2: During the weekday PM peak period under Cumulative Plus Project Conditions, the addition of project-generated traffic would result in a significant impact at the intersection of Cedar Street/Brittan Avenue. The project's incremental effect would be cumulatively considerable. (S)

Mitigation Measure TRA-2: Implement Mitigation Measure TRA-1. (LTS).

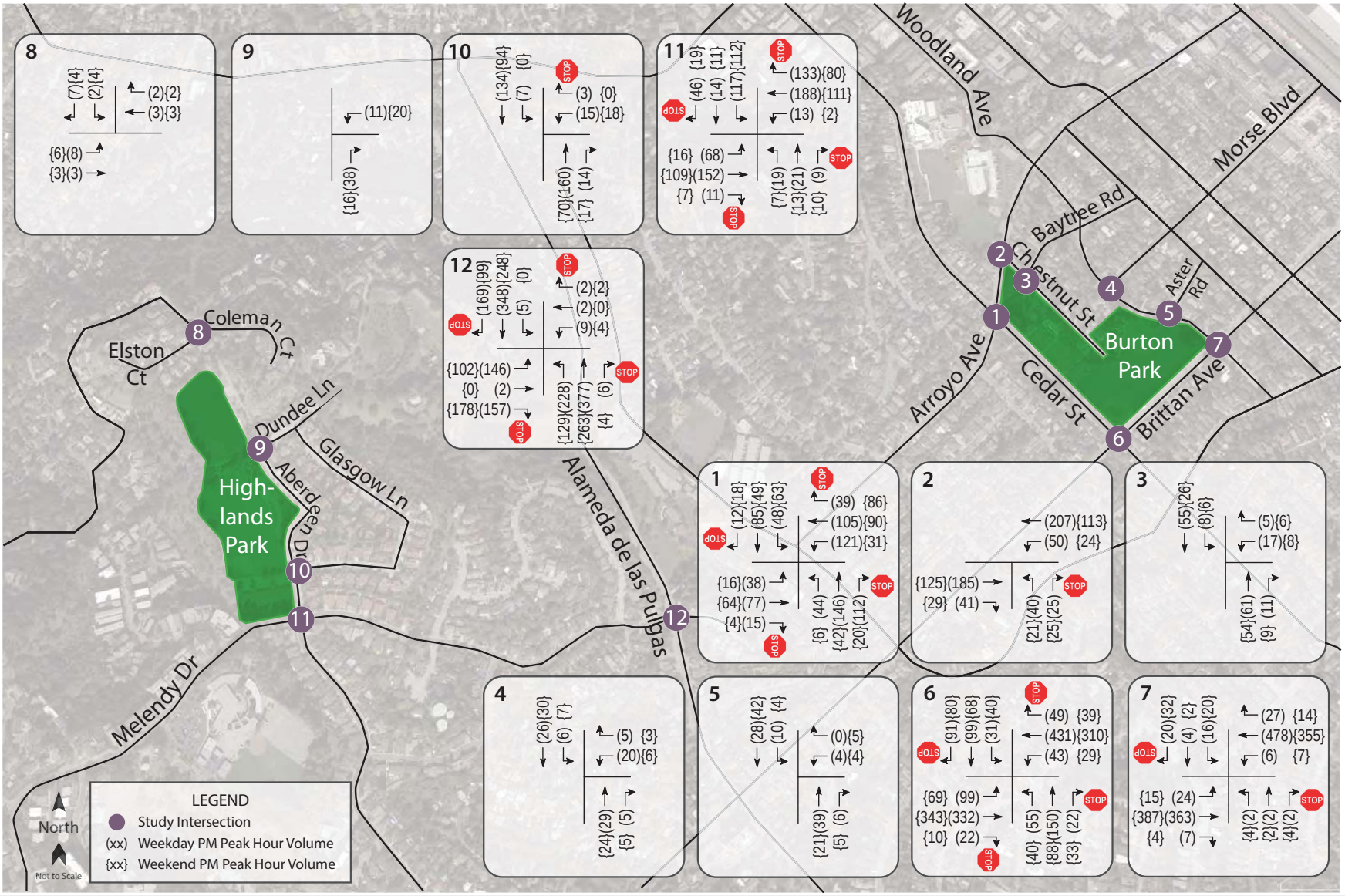

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FIGURE IV.B-7

NOT TO SCALE

Burton/Highlands Parks Project EIR

Near-Term Plus Project Traffic Volumes

SOURCE: W-TRANS, AUGUST 18, 2017.

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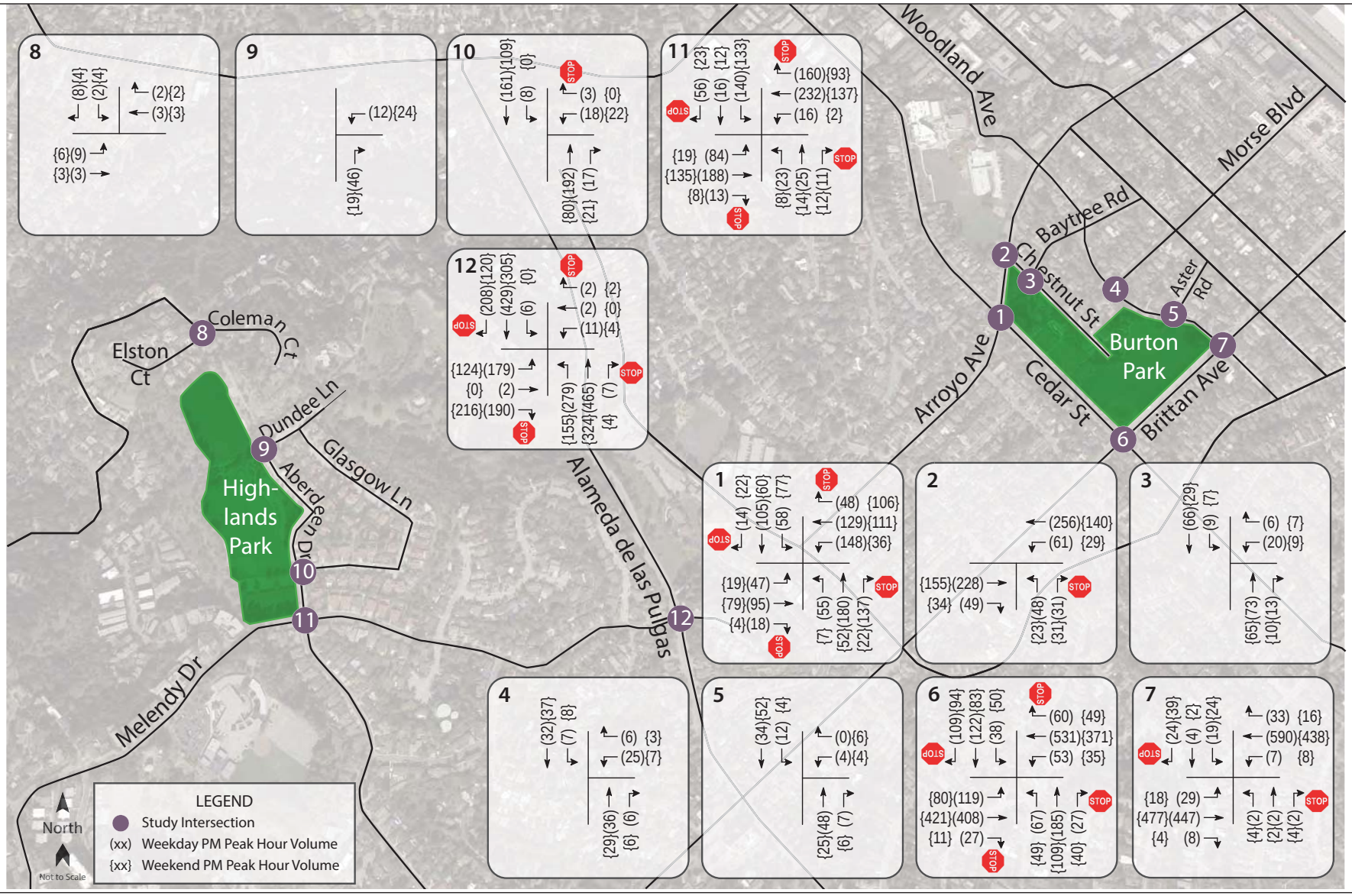

FIGURE IV.B-8

LSA

NOT TO SCALE

Burton/Highlands Parks Project EIR

Cumulative Plus Project Traffic Volumes

SOURCE: W-TRANS, AUGUST 18, 2017.

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Table IV.B-11: Cumulative Plus Project Peak Hour Intersection Levels of Service

Study Intersection *Approach*	Control	Weekday PM Peak Delay	 LOS	Weekend PM Peak Delay	 LOS
1. Cedar St/Arroyo Ave	AWSC	13.5	B	9.0	A
2. Chestnut St/Arroyo Ave	UC	12.2	B	9.6	A
Westbound (Arroyo) Approach		*14.4*	*B*	*10.8*	*B*
3. Chestnut St/Baytree Rd	UC	2.1	A	1.5	A
Westbound (Baytree) Approach		*9.5*	*A*	*8.9*	*A*
4. Woodland Ave/Morse Blvd	UC	2.9	A	1.6	A
Westbound (Morse) Approach		*9.0*	*A*	*8.8*	*A*
5. Woodland Ave/Aster Rd	UC	1.2	A	1.2	A
Westbound (Aster) Approach		*9.1*	*A*	*8.7*	*A*
6. Cedar St/Brittan Ave	AWSC	**109.2**	**F**	31.3	D
	Signal	11.9	B	10.1	B
	Mini-Rndbt	8.3	A	8.2	A
7. Woodland Ave/Brittan Ave	TWSC	1.2	A	1.4	A
Southbound (Woodland) Approach for weekday, Northbound (Woodland) Approach for weekend		*21.4*	*C*	*17.8*	*C*
8. Elston Ct/Coleman Ct	UC	5.5	A	5.1	A
Southbound (Elston) Approach		*8.4*	*A*	*8.5*	*A*
9. Aberdeen Dr/Dundee Ln	UC	8.2	A	7.7	A
Northbound (Aberdeen) Approach		8.4	A	8.4	A
10. Aberdeen Dr/Glasgow Ln	TWSC	0.8	A	0.9	A
Westbound (Glasgow) Approach		*10.8*	*B*	*9.7*	*A*
11. Aberdeen Dr-Hewitt Dr/Melendy Dr	AWSC	12.3	B	9.0	A
12. Melendy Dr/Alameda de las Pulgas	AWSC	29.0	D	14.4	B

Notes: Delay is measured in average seconds per vehicle
AWSC = All-Way Stop-Controlled
TWSC = Two-Way Stop-Controlled
UC = Uncontrolled
Mini-Rndbt = Mini-Roundabout
LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections or worst approaches at uncontrolled intersections are indicated in *italics*; **Bold** text = deficient operation; Shaded cells = conditions with recommended improvements
Source: W-Trans. 2017. October.

Similar to the Near-Term Plus Project condition, conversion of the Cedar Street/Brittan Avenue intersection all-way stop-controlled intersection to either a signalized intersection or a mini-roundabout would reduce this cumulative impact to a less-than-significant level. With a new signal in place, the intersection would operate at LOS B with 11.9 seconds of delay during the weekday PM peak hour and would not exceed any of the thresholds of significance. With construction of a mini-roundabout, the intersection would operate at LOS A with 8.3 seconds of delay during the weekday PM peak hour and would not exceed any of the thresholds of significance. Therefore, this cumulative impact would be reduced to a less-than-significant level with implementation of this mitigation measure.

(2) Conflict with an Applicable Congestion Management Agency Program. The proposed project would primarily generate project-related trips that are not anticipated to use regional roadway facilities like US 101 or El Camino Real. For example, only 10 percent (12 trips in the weekend peak hour) of all project trips are anticipated to use El Camino Real or US 101; therefore,

impacts to a CMP-designated road or highway would not result from the proposed project, and project-related impacts to CMP roadways would be less than significant.

(3) Increase Hazards Due to a Design Feature. The project (including the revisions to the 2010 Settlement Agreement in regards to signage and circulation) does not include major physical alterations to existing traffic and circulation facilities or a change in land use which would result in a substantial increase in hazards or hazardous conditions; therefore, this impact would be less than significant. Additionally, construction of a second speed hump on Aberdeen Drive, as identified in the Settlement Agreement, could increase circulation hazards as the two speed humps would need to be placed closer together than industry standards suggest.

(4) Inadequate Emergency Access. The proposed project would not alter the capacity or physical characteristics of the roadways serving each park. Although there would be an increase in project-generated trips into the immediate areas surrounding each park, those vehicles are most likely parked and would not be blocking the roadway travel lanes. Emergency vehicle response times are not expected to change with the addition of project-generated trips. Therefore, the project would not have a substantial effect on emergency access to the areas in the vicinity of each park, and this impact would be less than significant.

(5) Alternative Modes of Transportation. Potential impacts associated with the project's effects on pedestrian, transit, and bicycle facilities are discussed below.

Pedestrian Facilities. Given the proximity of residential land uses to the project site, it is reasonable to assume that some project patrons would want to walk, bicycle, and/or use transit to reach either Burton or Highlands Park. A connected sidewalk network as well as paved paths through each park currently exists at each project site. However, as described previously, there are existing gaps where sidewalks and/or curb ramps are absent and that can effect convenient and continuous access for pedestrians and/or present safety concerns in those locations where appropriate pedestrian infrastructure is absent.

Impact TRA-3: The addition of project-generated vehicular traffic would increase the potential for conflicts with pedestrians crossing streets or parking lots to access the parks which would be a significant impact. (S)

Mitigation Measure TRA-3: The City shall implement the following pedestrian improvements to reduce the impact to a less-than-significant level:

- At Burton Park, the City shall construct pedestrian sidewalks and crosswalks along Baytree Road between Chestnut Street and Woodland Avenue.
- At Highlands Park, the City shall enhance pedestrian crossing opportunities along Aberdeen Drive to include a crosswalk (with curb ramps) at the north side of the intersection of Glasgow Lane. The City shall install a new curb ramp on the west side of Aberdeen Drive across from the existing curb ramp at the northeast corner at Glasgow Lane. Additionally, the City shall initiate a program to prohibit on-street parking adjacent to existing driveways along Aberdeen Drive to improve driver sight lines and enhance safety in the areas nearest each driveway. (LTS)

Bicycle Facilities. Existing bicycle facilities, including bike lanes on Brittan Avenue, and Alameda de las Pulgas, together with shared use of minor streets provide adequate access for bicyclists. Based on field observations, bicycles are parked casually at various locations around both Burton and Highlands Park. Each park has ample capacity for additional casual bicycle parking. This behavior is expected to continue with the addition of new project-generated bicycle trips. Bicycle facilities serving the project sites are expected to be adequate; therefore, the project would not have a significant impact on the provision of bicycle facilities or use.

Transit Facilities. Existing transit service is not currently offered beyond 4:00 p.m. on school days and is not offered at all on weekends. Therefore, it is expected that there will be no project-generated transit trips and the project would not have an impact on the provision of transit services.

(6) Inadequate Parking Capacity. The City of San Carlos Municipal Code does not specify parking requirements for a public park and sports fields. The proposed project would not modify the existing parking facilities at either location by removing existing or adding new parking spaces. Parking deficiencies are not themselves CEQA impacts unless they result in physical impacts to the environment such as noise and air quality impacts from idling cars and additional traffic on neighborhood streets.

Parking demand estimates are typically developed using standard rates published by the ITE in the Parking Generation, 4th Edition, 2010. However, standard rates are not available or applicable to the lighting improvements planned at the parks; therefore, parking demand estimates were developed based on parking surveys and the projected peak hour demands at each park during both the weekday and weekend day study periods. The existing parking supply and expected future parking demand are shown in Table IV.B-12.

Table IV.B-12: Parking Analysis Summary

Location (period)	Off-Street Supply (spaces)	On-Street Supply (spaces)	Existing Parking Utilization			Additional Parking Demand (With Project) Average Peak Parking Demand
			Peak # Off-Street Occupied (spaces)	Peak # On-Street Occupied (spaces)	Peak # Available (spaces)	
Weekday						
Burton Park	35	389	17	173	234	40
Highlands Park	96	297	87	84	222	36
Weekend						
Burton Park	35	389	35	209	180	50
Highlands Park	96	297	61	128	204	44

Source: W-Trans. 2017. August 18.

The parking utilization survey confirmed that approximately 180 to 204 parking spaces are typically available during the study periods. These spaces would provide adequate capacity for the anticipated increase in parking demand with implementation of the project expected at each park location. It is recognized that tournaments and other events result in higher parking demand on certain days. However, the frequency of these events is limited during the year, and the City implements additional parking management practices for these events (i.e., having buses, and visitors park at nearby schools).

The proposed project would have a less-than-significant impact on parking because the existing parking supply at each park would accommodate the estimated average parking demand associated with the project. Also, since there would be an adequate parking supply for the project, additional and substantial vehicle circulation as a result of the proposed project (i.e., autos traveling within the parking lots or along the adjacent streets while searching for parking spots) resulting in a significant traffic impact would not occur.

C. NOISE AND VIBRATION

This section describes existing noise and vibration conditions, sets forth criteria for determining the significance of noise and vibration impacts, and estimates the likely noise and vibration impacts that would result from development of the proposed project. Mitigation measures are identified, as necessary, to address significant environmental impacts.

1. Setting

This section describes the fundamentals of noise and vibration, summarizes the regulatory framework, and describes the existing noise environment of the project site and its vicinity.

a. Characteristics of Sound. Noise is generally defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is the number of complete vibrations or cycles per second of a wave that results in the range of tone from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment, and it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effects on adjacent sensitive land uses.

(1) Measurement of Sound. Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. Table IV.C-1 contains a list of typical acoustical terms and definitions. Figure IV.C-1 shows representative outdoor and indoor noise levels in units of dBA.

A decibel (dB) is a unit of measurement which indicates the relative intensity of a sound. The 0 point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3 dB or less are only perceptible in laboratory environments. Audible increases in noise levels generally refer to a change of 3 dB or more, as this level has been found to be barely perceptible to the human ear in outdoor environments. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, 30 dB is 1,000 times more intense. Each 10-dB increase in sound level is perceived as approximately a doubling of loudness.

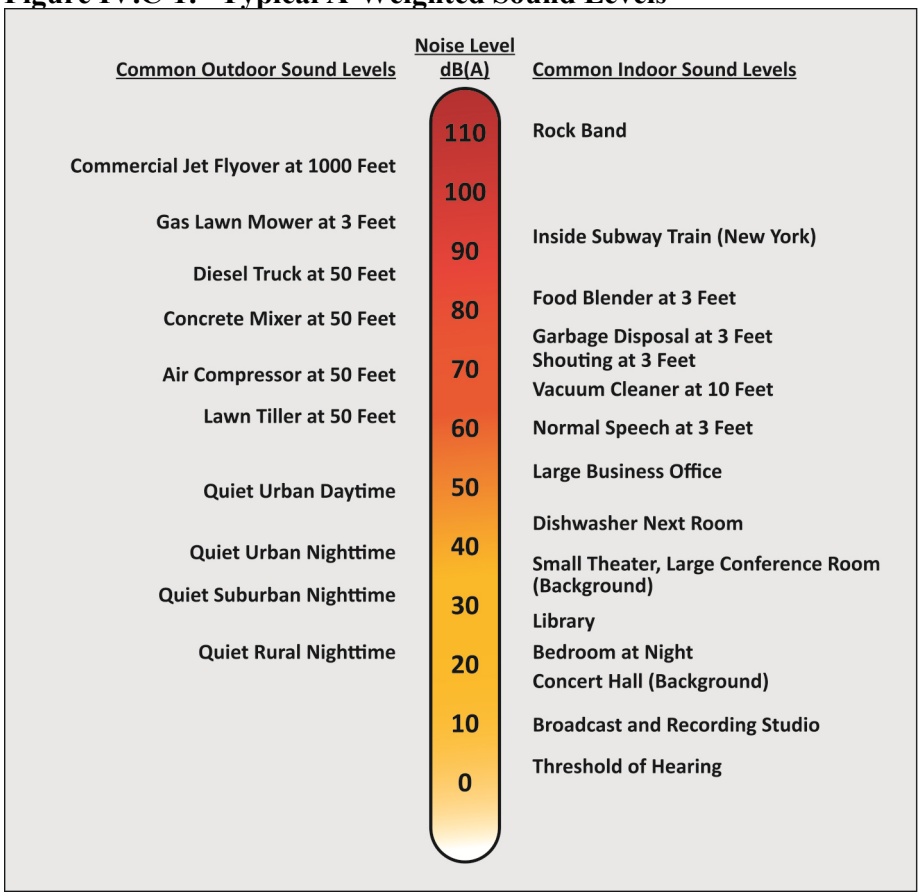
As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a 6 dB reduction in the noise level for each doubling of distance from a single point source of noise to the noise sensitive receptor of concern.

Table IV.C-1: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit of level that denotes the ratio between two quantities proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L_{01}, L_{10}, L_{50}, L_{90}	The fast A-weighted noise levels equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of five decibels to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Harris, Cyril. 1998. *Handbook of Acoustical Measurements and Noise Control*.

Figure IV.C-1: Typical A-Weighted Sound Levels



Source: Compiled by LSA Associates, Inc., 2016.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq}, the community noise equivalent level (CNEL), and the day-night average level (L_{dn}) based on A-weighted decibels (dBA). CNEL is the time varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale, but without the adjustment for events occurring during the evening relaxation hours. CNEL and L_{dn} are within one dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours. Typical A-weighted sound levels from various sources are described in Figure IV.C-1.

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis are specified in terms of maxi-

mum levels denoted by L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions, and addresses the annoying aspects of intermittent noise.

Noise standards in terms of percentile exceedance levels, Ln, are often used together with the L_{max} for noise enforcement purposes. When specified, the percentile exceedance levels are not to be exceeded by an offending sound over a stated time period. For example, the L_{10} noise level represents the level exceeded ten percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the lowest noise level experienced during a monitoring period. It is normally referred to as the background noise level. For a relatively steady noise, the measured L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first is audible impacts that refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3.0 dBA or greater, since, as described earlier, this level of noise change has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1.0 and 3.0 dBA. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise level of less than 1.0 dBA that are inaudible to the human ear. A change in noise level of at least 5 dBA would be required before any noticeable change in human response would be expected and a 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response. Only audible changes in existing ambient or background noise levels are considered potentially significant.

(2) Physiological and Psychological Effects of Noise. The effects of noise on people can also be described in three categories: annoyance, interference with activities such as speech or sleep, and physiological effects such as hearing loss. Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, and thereby affecting blood pressure, functions of the ear, and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling.

Unwanted community effects of noise occur at levels much lower than those that cause hearing loss and other health effects. Noise annoyance occurs when it interferes with sleeping, conversation, and noise-sensitive work, including learning or listening to the radio, television, or music. According to World Health Organization (WHO) noise studies, few people are seriously annoyed by daytime activities with noise levels below 55 dBA, or are only moderately annoyed with noise levels below 50 dBA.[1]

b. Characteristics of Groundborne Vibration. Vibrating objects in contact with the ground radiate vibration waves through various soil and rock strata to the foundations of nearby buildings. As

[1] World Health Organization, 1999. *Guidelines for Community Noise*. Website: www.who.int/docstore/peh/noise/guidelines2.html (accessed September 1, 2017).

the vibration propagates from the foundation throughout the remainder of the building, the vibration of floors and walls may cause perceptible vibration from the rattling of windows or a rumbling noise. The rumbling sound caused by the vibration of room surfaces is called groundborne noise. When assessing annoyance from groundborne noise, vibration is typically expressed as root mean square (rms) velocity in units of decibels of 1 micro-inch per second. To distinguish vibration levels from noise levels, the unit is written as "VdB." Human perception to vibration starts at levels as low as 67 VdB and sometimes lower. Annoyance due to vibration in residential settings starts at approximately 70 VdB. Groundborne vibration is almost never annoying to people who are outdoors. Although the motion of the ground may be perceived, without the effects associated with the shaking of the building, the motion does not provoke the same adverse human reaction.

Table IV.C-2: Typical Vibration Source Levels for Construction Equipment

Equipment		PPV at 25 feet (in/sec)	Approximate VdB at 25 feet
Pile Driver (impact)	Upper range	1.518	112
	Typical	0.644	104
Pile Driver (sonic)	Upper range	0.734	105
	Typical	0.170	93
Clam shovel drop (slurry wall)		0.202	94
Hydromill (slurry wall)	In soil	0.008	66
	In rock	0.017	75
Vibratory roller		0.210	94
Hoe ram		0.089	87
Large bulldozer		0.089	87
Caisson drilling		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Source: Federal Transit Administration, 2006. *Transit Noise and Vibration Impact Assessment.* May.

In extreme cases, excessive groundborne vibration has the potential to cause structural damage to buildings. Vibration impacts on building structures are generally assessed in terms of peak particle velocity (PPV). Common sources of groundborne vibration include trains and construction activities such as blasting, pile driving and operating heavy earthmoving equipment. Typical vibration source levels from construction equipment are shown in Table IV.C-2.

c. Noise Regulatory Framework. The following section provides brief discussions of the federal, State, and local regulatory framework related to noise.

(1) U.S. Environmental Protection Agency (EPA). In 1972 Congress enacted the Noise Control Act. This act authorized the EPA to publish descriptive data on the effects of noise and establish levels of sound "requisite to protect the public welfare with an adequate margin of safety." These levels are separated into health (hearing loss levels) and welfare (annoyance levels), as shown in Table IV.C-3. The EPA cautions that these identified levels are not standards because they do not take into account the cost or feasibility of the levels.

For protection against hearing loss, 96 percent of the population would be protected if sound levels are less than or equal to an $L_{eq}(24)$ of 70 dBA. The "(24)" signifies an L_{eq} duration of 24 hours. The EPA activity and interference guidelines are designed to ensure reliable speech communication at about 5 feet in the outdoor environment. For outdoor and indoor environments, interference with activity and annoyance should not occur if levels are below 55 dBA and 45 dBA, respectively.

The noise effects associated with an outdoor L_{dn} of 55 dBA are summarized in Table IV.C-4. At 55 dBA L_{dn}, 95 percent sentence clarity (intelligibility) may be expected at 11 feet, and no substantial

community reaction. However, 1 percent of the population may complain about noise at this level and 17 percent may indicate annoyance.

Table IV.C-3: Summary of EPA Noise Levels

Effect	Level	Area
Hearing loss	$L_{eq}(24) \leq 70$ dB	All areas.
Outdoor activity interference and annoyance	$L_{dn} \leq 55$ dB	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	$L_{eq}(24) \leq 55$ dB	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	$L_{eq} \leq 45$ dB	Indoor residential areas.
	$L_{eq}(24) \leq 45$ dB	Other indoor areas with human activities such as schools, etc.

Source: U.S. Environmental Protection Agency, 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. March.

Table IV.C-4: Summary of Human Effects in Areas Exposed to 55 dBA L_{dn}

Type of Effect	Magnitude of Effect
Speech – Indoors	100 percent sentence intelligibility (average) with a 5 dB margin of safety.
Speech – Outdoors	100 percent sentence intelligibility (average) at 0.35 meter. 99 percent sentence intelligibility (average) at 1.0 meter. 95 percent sentence intelligibility (average) at 3.5 meters.
Average Community Reaction	None evident; 7 dB below level of significant complaints and threats of legal action and at least 16 dB below "vigorous action."
Complaints	1 percent dependent on attitude and other non-level related factors.
Annoyance	17 percent dependent on attitude and other non-level related factors.
Attitude Towards Area	Noise essentially the least important of various factors.

Source: U.S. Environmental Protection Agency, 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. March.

(2) State of California. The State of California has established regulations that help prevent adverse impacts to occupants of buildings located near noise sources. The "State Noise Insulation Standard" requires noise-sensitive land uses to meet performance standards through design and/or building materials that would offset any noise source in the vicinity of the building. State regulations include requirements for the construction of new hotels, motels, apartment houses, and dwellings other than detached single-family dwellings that are intended to limit the extent of noise transmitted into habitable spaces. These requirements are found in the California Code of Regulations, Title 24 (known as the Building Standards Administrative Code), Part 2 (known as the California Building Code), Appendix Chapters 12 and 12A. For limiting noise transmitted between adjacent dwelling units, the noise insulation standards specify the extent to which walls, doors, and floor ceiling assemblies must block or absorb sound. For limiting noise from exterior noise sources, the noise insulation standards set an interior standard of 45 dBA CNEL in any habitable room with all doors and windows closed. In addition, the standards require preparation of an acoustical analysis demonstrating the manner in which dwelling units have been designed to meet this interior standard, where such units are proposed in an area with exterior noise levels greater than 60 dBA CNEL.

The State has also established land use compatibility guidelines for determining acceptable noise levels for specified land uses. The City of San Carlos has adopted the State's land use compatibility guidelines, as discussed below and shown in Table IV.C-6.

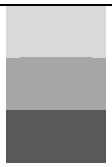
(3) Local Regulations. The City of San Carlos addresses noise in the Noise Element of the General Plan.[2] The Noise Element sets noise and land use compatibility guidelines, as shown in Table IV.C-5 below. The Noise Element also contains goals, policies, and actions that seek to encourage compatible noise environments for new development and control sources of noise citywide. The following policies and actions from the Noise Element are applicable to the proposed project.

- **Policy NOI-1.1:** Use the Noise and Land Compatibility Standards shown in Table IV.C-5, the noise level performance standards in Table IV.C-6 and the projected future noise contours for the General Plan, as a guide for future planning and development decisions.
- **Policy NOI-1.2:** Minimize noise impacts on noise-sensitive land uses. Noise-sensitive land uses include residential uses, retirement homes, hotel/motels, schools, libraries, community centers, places of public assembly, daycare facilities, churches and hospitals.
- **Policy NOI-1.3:** Limit noise impacts on noise-sensitive uses to noise level standards as indicated in Table IV.C-5.
- **Policy NOI-1.6:** Where noise mitigation measures are required to achieve the noise level standards, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered after practical design-related noise mitigation measures have been integrated into the project.
- **Policy NOI-1.8:** During all phases of construction activity, reasonable noise reduction measures shall be utilized to minimize the exposure of neighboring properties to excessive noise levels.
    - Construction activities shall comply with the City's noise ordinance.
- *Action NOI-1.4:* Require the evaluation of mitigation measures for projects that would cause the following criteria to be exceeded or would cause a significant adverse community response:
    - Cause the L_{dn} at noise-sensitive uses to increase by 3 dB or more and exceed the "normally acceptable" level.
    - Cause the L_{dn} at noise-sensitive uses to increase 5 dB or more and remain "normally acceptable."
    - Cause noise levels to exceed the limits in Table IV.C-5.

[2] San Carlos, City of. 2009. *2030 General Plan. Noise Element.* October 12. Website: cityofsancarlos.org/civicax/filebank/blobdload.aspx?blobid=5925 (accessed October 18, 2017).

Table IV.C-5: Land Use Compatibility for Community Noise Environments

Land Use Category	Community Noise Exposure in Decibels (CNEL), dBA or Day/Night Average Noise Level in Decibels (Ldn), dBA 55 60 65 70 75 80
Single-Family Residential	
Multi-Family Residential, Hotels and Motels	
Outdoor Sports and Recreation, Neighborhood Parks and Playgrounds	
Schools, Libraries, Museums, Hospitals, Personal Care, Meeting Halls, Churches	
Office Buildings, Business, Commercial and Professional	
Auditoriums, Concert Halls, Amphitheaters	



Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Conditionally Acceptable	Specified land use may be permitted only after detailed analysis of the noise reduction requirements and needed noise insulation features included in the design.
Unacceptable	New construction or development should generally not be undertaken because mitigation is usually not feasible to comply with noise element policies.

Source: City of San Carlos, 2009.

Table IV.C-6: Non-Transportation Noise Standards

Land Use Receiving the Noise	Hourly Noise-Level Descriptor	Exterior Noise-Level Standard in Any Hour (dBA)		Interior Noise-Level Standard in Any Hour (dBA)	
		Daytime (7:00 a.m. – 10:00 p.m.)	Nighttime (10:00 p.m. – 7:00 a.m.)	Daytime (7:00 a.m. – 10:00 p.m.)	(10:00 p.m. – 7:00 a.m.)
Residential	L_{eq}	55	45	40	30
	L_{max}	70	60	55	45
Medical, convalescent	L_{eq}	55	45	45	35
	L_{max}	70	60	55	45
Theater, auditorium	L_{eq}	–	–	35	35
	L_{max}	–	–	50	50
Church, meeting hall	L_{eq}	55	–	40	40
	L_{max}	–	–	55	55
School, library, museum	L_{eq}	55	–	40	–
	L_{max}	–	–	55	–

Source: City of San Carlos, 2009.

The City of San Carlos also addresses noise in Chapter 9.30, Noise Control, of the San Carlos Municipal Code.[3] The City of San Carlos Construction Hours Ordinance is set forth in Section 9.30.070(B) of the San Carlos Municipal Code, which restricts construction activities to between the hours of 8:00 a.m. and 6:00 p.m. Monday through Friday and between the hours of 9:00 a.m. to

[3] San Carlos, City of. 2017. *San Carlos Municipal Code. Chapter 9.30 Noise Control*. June 26. Website: www.codepublishing.com/CA/SanCarlos/#!/SanCarlos09/SanCarlos0930.html#9.30 (accessed October 18, 2017).

5:00 p.m. on Saturdays and Sundays. Construction activity is not allowed on the following holidays: New Year's Day, Martin Luther King Jr. Day, President's Day, Memorial Day, 4th of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day. In addition, the Municipal Code requires that all gasoline-powered construction equipment shall be equipped with an operating muffler or baffling system as originally provided by the manufacturer, and no modification to these systems is permitted. Only the Building Official has the authority to grant exceptions to construction noise-related activities.

d. Existing Noise Environment. The ambient noise environment in the City of San Carlos is affected by a variety of noise sources, including traffic, rail, and airport noise sources. In San Carlos, vehicular traffic on major roadways, railroad operations along the Caltrain corridor and the San Carlos Airport are the predominant sources of noise. There are no known stationary noise sources that make a significant contribution to the City's noise environment. The majority of commercial and industrial land uses within San Carlos are located east-northeast of El Camino Real and may be minor contributors to the noise environment, while Highway 101, major arterial roadways and the railroad contribute significantly.[4] The following section describes the existing noise environment and identifies the primary noise sources in the vicinity of the project sites.

(1) Existing Ambient Noise Levels. As discussed above, the ambient noise environment in the City of San Carlos is impacted by a variety of sources including traffic, rail, and airport noise sources. The project sites are currently used for games, practices and tournaments (see Tables III-1 and III-2 in Chapter III, Project Description). Six short-term (15-minute) noise measurements and three long-term noise measurements were conducted to establish the existing ambient noise environment with and without activities on the fields, at sensitive land uses in the vicinity of the project sites and to identify noise associated with the activity level on the sites. Monitoring locations for Burton Park are shown in Figure IV.C-2 and monitoring locations for Highlands Park are shown in Figure IV.C-3. Monitoring data is provided in Appendix F.

The six short-term noise measurements (identified as ST-1 through ST-6) were conducted on August 13, 2017, between 1:26 p.m. and 3:21 p.m. for periods of 15 minutes each. Noise measurements ST-1 through ST-4 were conducted at Highlands Park while soccer games were occurring and noise measurements ST-5 and ST-6 were conducted at Burton Park while no activity was occurring. LT-1 recorded a three-day measurement from August 10, 2017, to August 13, 2017, at Burton Park and LT-2 and LT-3 recorded four-day measurements from August 24, 2017, to August 27, 2017, at Highlands Park. Noise measurement data collected during the noise measurements are summarized in Table IV.C-7. The meteorological data conditions at the time of the short-term noise monitoring are shown in Table IV.C-8. The short-term noise measurements indicate that ambient noise in the project site vicinity ranges from approximately 57.7 dBA to 70.4 dBA L_{eq} at Highlands Park and 62.8 dBA to 66.4 dBA L_{eq} at Burton Park. The long-term noise measurements ranged from approximately 57.5 dBA to 58.5 dBA L_{dn} at Burton Park and 54.5 to 55.2 dBA L_{dn} at Highlands Park. Noise from a soccer game, spectators, park users, and traffic on surrounding roadways were reported as the primary noise sources.

[4] San Carlos, City of, 2008, op. cit.

Table IV.C-7: Ambient Noise Monitoring Results, dBA

Location Number	Location Description	Start Time	L_{eq}/ L_{dn} [a]	L_{max} [b]	L_{min} [c]	Primary Noise Sources
ST-1	Highlands Park, Stadium Field, northern border of site near homes	1:26 p.m.	58.1	76.0	41.4	Soccer game, spectators, kids playing, airplanes
ST-2	Highlands Park, Stadium Field, east of spectators	1:44 p.m.	70.4	87.7	46.2	Soccer game, spectators, airplanes
ST-3	Highlands Park, Stadium Field, southeast of spectators near homes and Dundee Lane	2:02 p.m.	63.7	83.8	46.1	Soccer game, spectators, airplanes
ST-4	Highlands Park, Highlands Field, on grass area between spectators/ parking lot and Auberdeen Drive	2:24 p.m.	57.7	95.4	44.5	Soccer game, spectators, airplanes, truck (L_{max})
ST-5	Burton Park, Flanagan Field, corner of Woodland Avenue and Aster Road	2:48 p.m.	62.8	85.4	51.2	Traffic, people walking past, people talking
ST-6	Burton Park, Madsen Field, on Brittan Avenue east of Brittan Avenue/Cedar Street intersection	3:06 p.m.	66.4	94.2	50.3	Cars on Brittan Avenue
LT-1 (weekday)	Burton Park, Flanagan Field, northern border of project site near existing homes and youth center	12:00 p.m., August 10	63.0/ 58.5	77.1	40.6	Ambient traffic, kids playing
LT-1 (weekend)	Burton Park, Flanagan Field, northern border of project site near existing homes and youth center	2:00 p.m., August 11	63.5/ 57.5	73.2	63.5	Ambient traffic, kids playing
LT-2 (weekday)	Highlands Park, Stadium Field, northern border of site near homes	3:00 p.m., August 24	64.9/ 54.5	77.4	37.5	Park users
LT-2 (weekend)	Highlands Park, Stadium Field, northern border of site near homes	3:00 p.m., August 27	67.2/ 55.2	77.2	39.1	Park users
LT-3 (weekday)	Highlands Park, Stadium Field, northeastern border of site near homes and trail	3:00 p.m., August 24	64.7/ 54.9	82.4	44.1	Park users
LT-3 (weekend)	Highlands Park, Stadium Field, northeastern border of site near homes and trail	3:00 p.m., August 27	55.8/ 54.3	64.6	44.8	Park users

[a] L_{eq} represents the average of the sound energy occurring over the 15-minute time period. L_{dn} is the day-night average level (L_{dn}) which is the 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 dB to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.

[b] L_{max} is the highest sound level measured during the 15-minute time period.

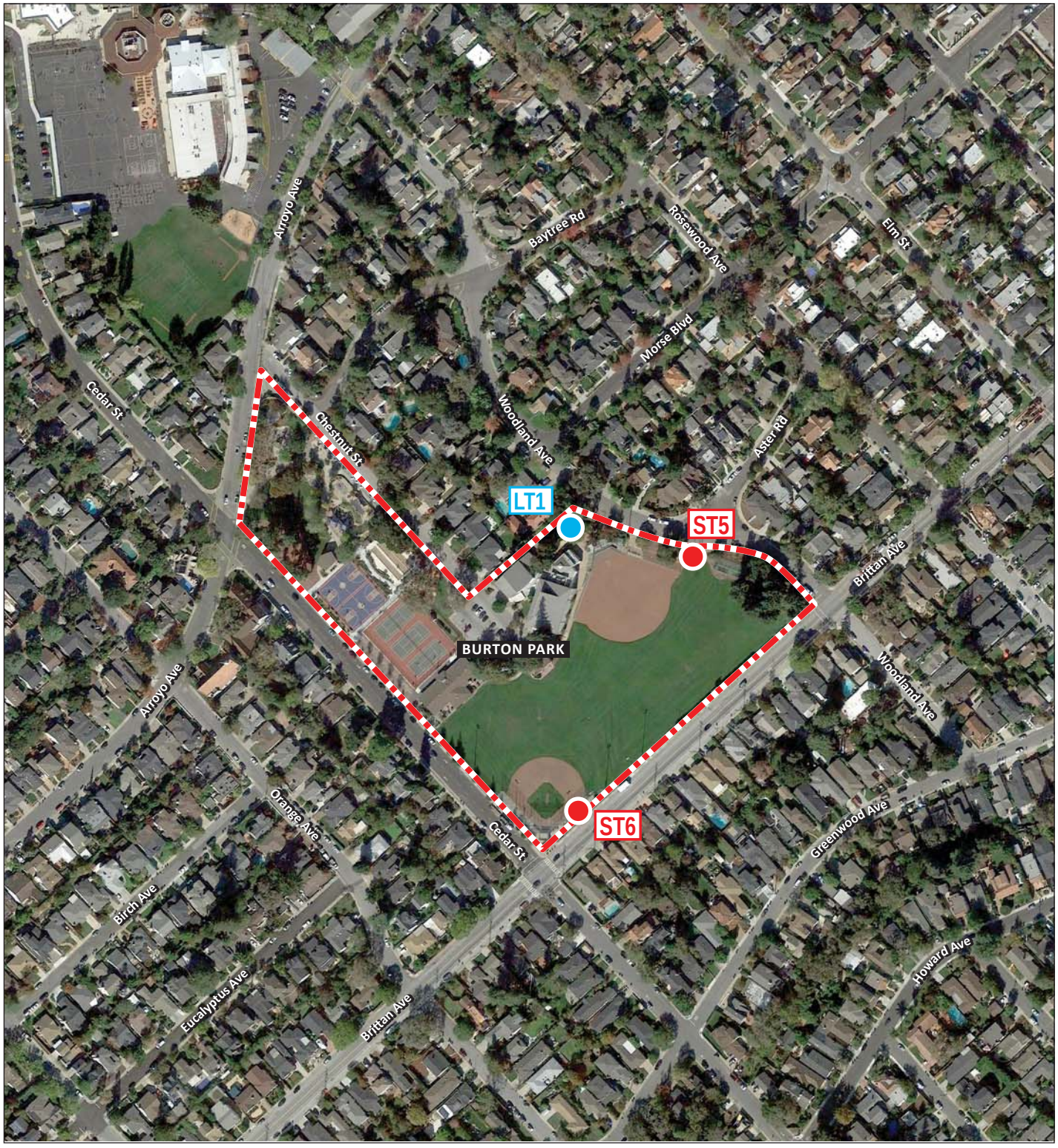
[c] L_{min} is the lowest sound level measured during the 15-minute time period.

Source: LSA Associates, Inc., August 2017.

Table IV.C-8: Meteorological Conditions During Ambient Noise Monitoring

Location Number	Maximum Wind Speed (mph)	Average Wind Speed (mph)	Temperature (˚F)	Relative Humidity (%)	Sky Conditions
ST-1	7.1	1.1	80.3	54	Sunny and clear
ST-2	9.3	1.4	77.3	53	Sunny and clear
ST-3	10.1	2.1	79.9	56	Sunny and clear
ST-4	10.1	2.0	78.1	54	Sunny and clear
ST-6	8.1	1.4	77.8	55	Sunny and clear
ST-5	10.3	3.0	77.6	56	Sunny and clear

Source: LSA Associates, Inc., August 2017.



LSA

FIGURE IV.C-2

SOURCES: GOOGLE EARTH; 11/2/16; LSA, 2017.

Burton/Highlands Parks Project EIR
Noise Monitoring Locations - Burton Park

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVC2.ai (9/1/17)

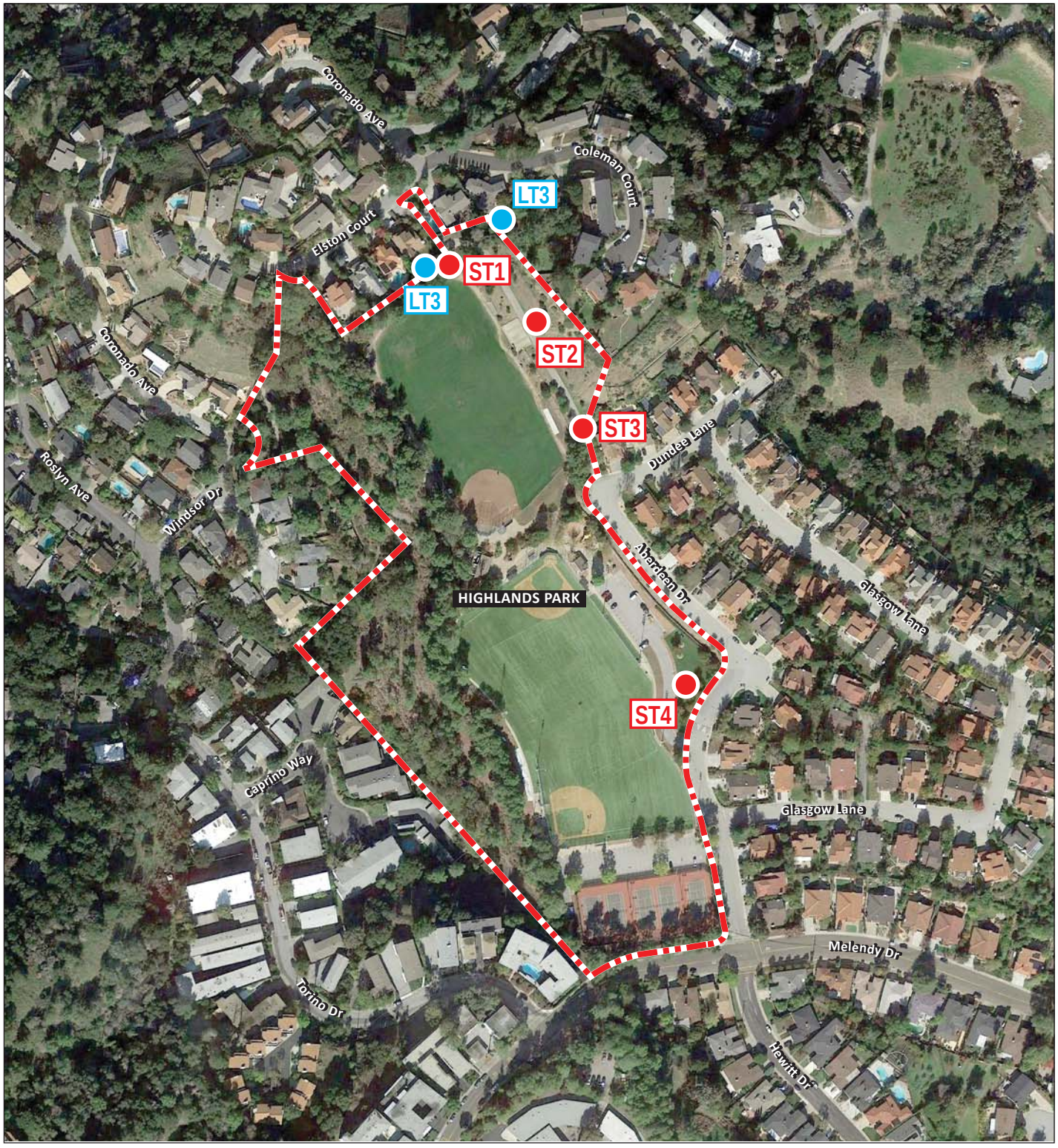


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FIGURE IV.C-3

ST# Short-Term Noise Monitoring Locations

LT# Long-Term Monitoring Location

Project Site

N

0 150 300

FEET

Burton/Highlands Parks Project EIR

Noise Monitoring Locations - Highlands Park

SOURCES: GOOGLE EARTH; 11/2/16; LSA, 2017.

I:\CNH1601 Burton Highlands Parks Lighting\figures\EIR\Fig_IVC3.ai (9/1/17)

(2) Existing Sensitive Land Uses. Sensitive receptors include residences, schools, hospitals, churches, and similar uses that are sensitive to noise. Project construction and operation could adversely affect nearby noise-sensitive land uses. The closest sensitive receptors to Highlands Park include the single-family residences located approximately 70 feet north and east of the project site along Elston Court. The closest sensitive receptors to Burton Park include the single-family residences located approximately 95 feet north of the project site along Woodland Avenue.

(3) Existing Traffic Noise. Motor vehicles with their distinctive noise characteristics are a major source of noise in San Carlos. The amount of noise varies according to many factors, such as volume of traffic, vehicle mix (percentage of cars and trucks), average traffic speed, and distance from the observer. Major contributing roadway noise sources in the vicinity of the project sites include Arroyo Avenue, Cedar Street, Brittan Avenue, Melendy Drive, and Alameda de las Pulgas, as well as other arterial and collector roadways throughout the City.

Existing roadway traffic noise levels in the project vicinity were assessed using the Federal Highway Administration (FHWA) highway traffic noise prediction model (FHWA RD-77- 108). This model uses a typical vehicle mix for urban/suburban areas in California and requires parameters, including traffic volumes, vehicle speed, and roadway geometry, to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resultant noise levels are weighted and summed over 24-hour periods to determine the day-night average level (L_{dn}) values. Existing traffic noise contours along modeled roadway segments are shown in Table IV.C-9. These noise levels represent the worst-case scenario, which assumes that no shielding is provided between the traffic and the location where the noise contours are drawn. Appendix F provides the specific assumptions used in developing these noise levels and model printouts.

(4) Existing Airport Noise. Airport related noise levels are primarily associated with aircraft engine noise made while aircraft are taking off, landing, or running their engines while still on the ground. Aircraft overflights contribute to the ambient noise levels in San Carlos. The San Carlos Airport is the closest airport and is located approximately 1 mile northeast of the Burton Park project site and 1.75 miles northeast of the Highlands Park project site. However, no portion of the project sites lie within the 60 dBA CNEL noise contours of the airport.

Aircraft overflights associated with the San Francisco International Airport, Oakland International Airport, and San Jose International Airport are also audible from the project site. The San Francisco International Airport is located approximately 11 miles north of the Burton Park project site and approximately 13 miles north of the Highlands Park project site. The Oakland International Airport is located approximately 15 miles north of the Burton Park project site and approximately 14 miles north of the Highlands Park project site. The San Jose International Airport is located approximately 20 miles southeast of the Burton Park project site and approximately 21 miles southeast of the Highlands Park project site.

Table IV.C-9: Existing Traffic Noise Levels Without Project

Roadway Segment	ADT	Centerline to 70 dBA CNEL (feet)	Centerline to 65 dBA CNEL (feet)	Centerline to 60 dBA CNEL (feet)	CNEL (dBA) 50 feet from Centerline of Outermost Lane
Arroyo Avenue – Cedar Street to Chestnut Street	4,200	< 50	< 50	< 50	57.0
Chestnut Avenue – Arroyo Avenue to Baytree Road	750	< 50	< 50	< 50	49.5
Chestnut Avenue – East of Baytree Road	710	< 50	< 50	< 50	49.2
Baytree Road - North of Chestnut	230	< 50	< 50	< 50	44.3
Woodland Avenue – Morse Boulevard to Aster Road	570	< 50	< 50	< 50	48.3
Woodland Avenue – Aster Road to Brittan Avenue	710	< 50	< 50	< 50	49.2
Brittan Avenue – Woodland Avenue to Cedar Street	7,600	< 50	< 50	69	61.4
Cedar Street – Brittan Avenue to Arroyo Avenue	3,400	< 50	< 50	< 50	56.0
Coronado Avenue – Northwest of Elston Court/Coleman Court	80	< 50	< 50	< 50	39.8
Aberdeen Drive – Dundee Lane to Glasgow Lane	1,100	< 50	< 50	< 50	51.1
Aberdeen Drive – Glasgow Lane to Melendy Drive	1,900	< 50	< 50	< 50	53.5
Hewitt Drive - South of Melendy Drive	340	< 50	< 50	< 50	46.0
Melendy Drive – West of Aberdeen Drive	2,600	< 50	< 50	< 50	54.9
Melendy Drive – East of Aberdeen Drive	3,700	< 50	< 50	< 50	56.4
Melendy Drive – West of Alameda de las Pulgas	4,500	< 50	< 50	< 50	57.3
Alameda de las Pulgas – South of Melendy Drive	7,600	< 50	< 50	69	61.4

Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.
Light shaded cells indicate roadways adjacent to Burton Park.
Dark shaded cells indicate roadways adjacent to Highlands Park.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels

Source: Compiled by LSA (August 2017).

2. Impacts and Mitigation Measures

This section discusses potential noise and vibration impacts that could result from implementation of the proposed project. The section begins with the significance criteria, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate.

a. Criteria of Significance. The proposed project would result in a significant noise or vibration impact if it would:

- Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Expose persons to or generate excessive groundborne vibration and noise levels.
- Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- Be located within an airport land use plan, or, where such a plan has not been adopted, within two miles of a public airport or public use airport, so that the project would result in exposure of people residing or working in the project area to excessive noise levels.

- Be located within the vicinity of a private airstrip, so that the project would expose people residing or working in the project area to excessive noise levels.

b. Project Impacts. The following section discusses the potential noise and vibration impacts associated with implementation of the proposed project. Potential noise and vibration impacts are differentiated between Burton Park and Highlands Park, where applicable.

(1) Expose Persons to or Generate Noise Levels in Excess of Established Standards. The proposed project sites are located in relatively quiet areas with noise levels falling within the normally acceptable category according to the City of San Carlos' noise compatibility guidelines such that there are no substantial noise generators in the area and existing pass-through traffic levels produce low levels of noise. Implementation of the proposed project is intended to provide additional field lighting at Burton and Highlands Parks to allow for additional hours of play, which could expose existing nearby residences to noise generated from increase hours of use at each of the parks. Based on General Plan Action-I-1.4, a significant impact would occur if the proposed project would: cause the L_{dn} at noise-sensitive uses to increase by 3 dB or more and exceed the "normally acceptable" level; cause the L_{dn} at noise-sensitive uses to increase 5 dB or more and remain "normally acceptable"; or cause noise levels to exceed the limits in Table IV.C-5.

Burton Park. The closest noise-sensitive receptor to the Burton Park project site are the single-family residences located approximately 95 feet north of the project site along Woodland Avenue. As identified in Table IV.C-7, the measured noise level near the property line of the nearest sensitive receptor is approximately 58.5 dBA L_{dn} and 63.0 dBA L_{eq} on weekdays and approximately 57.5 dBA L_{dn} and 63.5 dBA L_{eq} on weekends when no events are occurring. In addition, the measured noise level 10 feet east of the spectators at the Burton Park project site while games are occurring is approximately 70.4 dBA L_{dn}. Due to distance attenuation, the nearest receptor would be subject to a noise level of approximately 51.8 dBA L_{dn} generated by spectators. Table IV.C-10 identifies noise levels with and without implementation of the proposed Burton Park project. Calculations are provided in Appendix F.

Table IV.C-10: Operational Noise Levels With and Without Burton Park Project at Nearest Receptor

	Existing Noise Levels	Operational Noise Levels	Existing Plus Project Noise Levels	Noise Level Increase
Weekday	58.5 dBA L_{dn}	51.8 dBA L_{dn}	59.0 dBA L_{dn}	0.5 dBA L_{dn}
Weekend	57.5 dBA L_{dn}	51.8 dBA L_{dn}	57.7 dBA L_{dn}	0.2 dBA L_{dn}

Note: L_{dn} is the day-night average level (L_{dn}) which is the 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 dB to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Source: LSA, August 2017.

As shown in Table IV.C-10, implementation of the proposed project would extend the hours that games and events would occur. When averaged over a 24-hour period, with the additional hours of use, it is estimated that the nearest receptors would be subject to noise levels of 59.0 dBA L_{dn} on weekdays and 57.7 dBA L_{dn} on weekends, which would result in an increase in noise levels of 0.5 dBA L_{dn} on weekdays and 0.2 dBA L_{dn} on weekends. This noise level increase would be well below the City's criteria for noise-level increases of 3 dBA or more and would remain below the City's normally acceptable noise level for single-family residential and recreational land uses, and therefore, this impact would be considered less than significant.

Highlands Park. The closest noise-sensitive receptors to the Highlands Park project site are the single-family residences located approximately 70 feet north of the project site along Elston Court. As identified in Table IV.C-7, the measured noise level near the property line of the nearest sensitive receptors is approximately 54.5 dBA L_{dn} and 64.9 dBA L_{eq} on weekdays and approximately 55.2 dBA L_{dn} and 67.2 dBA L_{eq} on weekends when no events are occurring. In addition, the measured noise level while games are occurring is approximately 58.1 dBA L_{eq}.

Table IV.C-11 identifies noise levels with and without implementation of the proposed Highlands Park project. Calculations are provided in Appendix F.

Table IV.C-11: Operational Noise Levels With and Without Highlands Park Project at Nearest Receptor

	Existing Noise Levels	Operational Noise Levels	Existing Plus Project Noise Levels	Noise Level Increase
Weekday	54.5 dBA L_{dn}	58.1 dBA L_{dn}	57.1 dBA L_{dn}	2.6 dBA L_{dn}
Weekend	55.2 dBA L_{dn}	58.1 dBA L_{dn}	57.6 dBA L_{dn}	2.4 dBA L_{dn}

Note: L_{dn} is the day-night average level (L_{dn}) which is the 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 dB to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Source: LSA, August 2017.

As shown in Table IV.C-11, implementation of the proposed project would extend the hours that games and events would occur. When averaged over a 24-hour period, with the additional hours of use, it is estimated that the nearest receptors would be subject to noise levels of 57.1 dBA L_{dn} on weekdays and 57.6 dBA L_{dn} on weekends, which would result in an increase in noise levels of 2.6 dBA L_{dn} on weekdays and 2.4 dBA L_{dn} on weekends. This noise level increase would be below the City's criteria for noise-level increases of 3 dBA or more and would remain below the City's normally acceptable noise level for single-family residential and recreational and uses. In addition, the nearest residential receptors have solid wood fences, which would reduce noise levels by approximately 5 dBA. Therefore, this impact would be considered less than significant.

(2) Groundborne Vibration and Groundborne Noise. Potential impacts related to groundborne vibration and noise are discussed below. As discussed, these impacts would be less than significant.

Burton Park. No permanent noise sources that would expose persons to excessive groundborne vibration or noise levels would be located at the Burton Park site. The proposed project would not require the use of pile driving during construction. In addition, operation activities associated with the proposed project would not result in excessive groundborne vibration or groundborne noise levels. Therefore, implementation of the proposed project would not expose persons within or around the project site to excessive groundborne vibration or noise and this impact would be less than significant.

Highlands Park. No permanent noise sources that would expose persons to excessive groundborne vibration or noise levels would be located at the Highlands Park site. The proposed project would not require the use of pile driving during construction. In addition, operation activities associated with the proposed project would not result in excessive groundborne vibration or groundborne noise levels. Therefore, implementation of the proposed project would not expose

persons within or around the project site to excessive groundborne vibration or noise and this impact would be less than significant.

(3) Permanent Increase in Ambient Noise. The following section addresses possible noise level increases in the project vicinity resulting from implementation of the proposed project. A potential source of increased noise level includes traffic-related noise and operational noise.

Traffic Noise Levels. To assess traffic noise impacts, the traffic noise levels along major roadway segments within the project vicinity were projected using FHWA modeling to predict traffic noise level conditions with and without the proposed project. FWHA modeling was based on existing traffic conditions. The FWHA modeling results are summarized in Table IV.C-12. The table includes projected traffic noise levels as measured at 50 feet from the centerline of the outermost traveled lane along the modeled roadway segments. The model does not account for existing sound walls or terrain features that could reduce traffic noise levels at adjacent land uses, but rather assumes a reasonable worst-case direct line-of-sight over hard surface to the modeled traffic noise sources. Appendix F provides the specific assumptions used in developing these noise levels and model printouts.

Burton Park. The largest increase in traffic-related noise as a result of the Burton Park project would be in the area directly adjacent to the project site on Chestnut Avenue, east of Baytree Road, with up to a 1.2 dBA increase under all scenarios. In addition, there would be a 1.3 dBA increase on Cedar Street, between Brittan Avenue and Arroyo Avenue under the Near Term Traffic scenario. These noise level increases would be well below the City's criteria for noise-level increases of 3 dBA or more and would remain below the City's normally acceptable noise level for single-family residential and recreational land uses. Therefore, this impact would be less than significant and no mitigation is required to address traffic-related noise.

Highlands Park. The largest increase in traffic-related noise as a result of the Highlands Park project would be directly adjacent of the project site on Aberdeen Drive, between Dundee Lane and Glasglow Lane, resulting in a maximum of 1.9 dBA increase in noise levels. In addition, there would be a 1.7 dBA increase on Coronado Avenue northwest of Elston Court/Coleman Court. These noise level increases would be well below the City's criteria for noise-level increases of 3 dBA or more and would remain below the City's normally acceptable noise level for single-family residential and recreational land uses. Therefore, this impact would be less than significant and no mitigation is required to address traffic-related noise.

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Table IV.C-12: Existing Traffic Noise Levels Without and With Project

	Existing Traffic Volumes (2017)					Near Term Traffic Volumes					Future 2040 Traffic Volumes				
	Without Project		With Project			Without Project		With Project			Without Project		With Project		
Roadway Segment	ADT	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane	ADT	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane	Increase from Baseline Conditions	ADT	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane	ADT	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane	Increase from Baseline Conditions	ADT	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane	ADT	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane	Increase from Baseline Conditions
Arroyo Avenue - Cedar Street to Chestnut Street	4,200	57.0	4,400	57.2	0.2	3,400	56.0	3,600	56.3	0.3	4,200	57.0	4,400	57.2	0.2
Chestnut Avenue - Arroyo Avenue to Baytree Road	750	49.5	950	50.5	1.0	790	49.7	990	50.7	1.0	970	50.6	1,200	51.5	0.9
Chestnut Avenue - East of Baytree Road	710	49.2	930	50.4	1.2	750	49.5	970	50.6	1.1	910	50.3	1,200	51.5	1.2
Baytree Road - North of Chestnut	230	44.3	250	44.7	0.4	270	45.0	290	45.3	0.3	310	45.6	330	45.9	0.3
Woodland Avenue - Morse Boulevard to Aster Road	570	48.3	610	48.6	0.3	610	48.6	650	48.9	0.3	750	49.5	790	49.7	0.2
Woodland Avenue - Aster Road to Brittan Avenue	710	49.2	790	49.7	0.5	770	49.6	850	50.0	0.4	930	50.4	1,100	51.1	0.7
Brittan Avenue - Woodland Avenue to Cedar Street	7,600	61.4	7,800	61.5	0.1	7,700	61.4	8,000	61.6	0.2	9,600	62.4	9,700	62.5	0.1
Cedar Street - Brittan Avenue to Arroyo Avenue	3,400	56.0	3,800	56.5	0.5	2,900	55.3	3,900	56.6	1.3	4,300	57.1	4,700	57.4	0.3
Coronado Avenue - Northwest of Elston Court/ Coleman Court	80	39.8	120	41.5	1.7	120	41.5	160	42.8	1.3	120	41.5	160	42.8	1.3
Aberdeen Drive - Dundee Lane to Glasgow Lane	1,100	51.1	1,700	53.0	1.9	1,100	51.1	1,700	53.0	1.9	1,400	52.2	1,900	53.5	1.3
Aberdeen Drive - Glasgow Lane to Melendy Drive	1,900	53.5	2,500	54.7	1.2	2,000	53.7	2,500	54.7	1.0	2,400	54.5	3,000	55.5	1.0
Hewitt Drive - South of Melendy Drive	340	46.0	440	47.2	1.2	400	46.7	500	47.7	1.0	460	47.4	560	48.2	0.8
Melendy Drive - West of Aberdeen Drive	2,600	54.9	2,600	54.9	0.0	2,700	55.0	2,700	55.0	0.0	3,300	55.9	3,300	55.9	0.0
Melendy Drive - East of Aberdeen Drive	3,700	56.4	4,200	57.0	0.6	3,800	56.5	4,300	57.1	0.6	4,700	57.4	5,200	57.9	0.5
Melendy Drive - West of Alameda de las Pulgas	4,500	57.3	5,000	57.7	0.4	4,600	57.4	5,100	57.8	0.4	5,700	58.3	6,200	58.6	0.3
Alameda de las Pulgas - South of Melendy Drive	7,600	61.4	8,100	61.7	0.3	7,800	61.5	8,300	61.8	0.3	9,600	62.4	10,100	62.6	0.2

Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.
Light shaded cells indicate roadways adjacent to Burton Park.
Dark shaded cells indicate roadways adjacent to Highlands Park.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
Source: LSA, August 2017.

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Operational Noise Levels. Implementation of the proposed project is intended to provide additional field lighting at Burton and Highlands Parks to allow for additional hours of play, which could expose existing nearby residences to noise generated from increased operational hours of use at each of the parks. A significant impact would occur if the proposed project would: cause the L_{dn} at noise-sensitive uses to increase by 3 dB or more and exceed the "normally acceptable" level; cause the L_{dn} at noise-sensitive uses to increase 5 dB or more and remain "normally acceptable"; or cause noise levels to exceed the limits in Table IV.C-5.

Burton Park. As discussed above, implementation of the proposed project would extend the hours that games and events would occur. When averaged over a 24-hour period, with the additional hours of use, it is estimated that the nearest receptors would be subject to noise levels of 59.0 dBA L_{dn} on weekdays and 57.7 dBA L_{dn} on weekends, which would result in an increase in noise levels of 0.5 dBA L_{dn} on weekdays and 0.2 dBA L_{dn} on weekends. This noise level increase would be well below the City's criteria for noise-level increases of 3 dBA or more and would remain below the City's normally acceptable noise level for single-family residential and recreational land uses. In addition, the nearest residential receptors have solid wood fences, which would reduce noise levels in private outdoor use areas by approximately 5 dBA. Therefore, this impact would be considered less than significant.

Highlands Park. As discussed above, implementation of the proposed project would extend the hours that games and events would occur. When averaged over a 24-hour period, with the additional hours of use, it is estimated that the nearest receptors would be subject to noise levels of 57.1 dBA L_{dn} on weekdays and 57.6 dBA L_{dn} on weekends, which would result in an increase in noise levels of 2.6 dBA L_{dn} on weekdays and 2.4 dBA L_{dn} on weekends. This noise level increase would be below the City's criteria for noise-level increases of 3 dBA or more and would remain below the City's normally acceptable noise level for single-family residential uses. In addition, the nearest residential receptors have solid wood fences, which would reduce noise levels in private outdoor use areas by approximately 5 dBA. Therefore, this impact would be considered less than significant.

Parking Lot Noise. Parking lot noise, including engine sounds, car doors slamming, car alarms, loud music, and people conversing, would occur as a result of the proposed project at the project site and on nearby streets. Typical parking lot activities, such as people conversing or doors slamming, generates approximately 60 dBA to 70 dBA L_{max} at 50 feet. Parking for both parks is currently provided in lots and on-street. Implementation of the proposed project would extend the hours that games and events would occur; therefore, there could be an increase in parking lot activity noise at both project sites. However, due to the intermittent nature of parking lot activity, when averaged over a 24-hour period, this noise level would not cause an increase in noise levels of more than 3 dBA. Therefore, the proposed project would not be expected to substantially increase parking lot noise over existing noise levels, and therefore, the proposed project would not result in significant parking lot noise.

(4) Temporary Increase in Ambient Noise. Implementation of the proposed project would include construction activities that would result in a substantial temporary increase in ambient noise levels in the project site vicinity. Construction-related short-term noise levels would be higher than existing ambient noise levels in the project site vicinity but would be limited to the temporary construction period.

Short-term noise impacts would occur during site preparation activities. Table IV.C-13 lists typical construction equipment noise levels (L_{max}) recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor, obtained from the FHWA Roadway Construction Noise Model. Construction-related short-term noise levels would be higher than existing ambient noise levels currently in the project area but would no longer occur once construction of the project is completed.

Table IV.C-13: Noise Emission Reference Levels and Usage Factors

Equipment Description	Acoustical Usage Factor[1]	Predicted L_{max} at 50 feet (dBA, slow)[2]	Actual Measured L_{max} at 50 feet (dBA, slow)[3]
All Other Equipment > 5 HP	50	85	N/A[4]
Auger Drill Rig	20	85	84
Backhoe	40	80	78
Chain Saw	20	85	84
Concrete Mixer Truck	40	85	79
Concrete Pump Truck	20	82	81
Concrete Saw	20	90	90
Crane	16	85	81
Dump Truck	40	84	76
Excavator	40	85	81
Flat Bed Truck	40	84	74
Front-End Loader	40	80	79
Generator	50	82	81
Generator (< 25 kVA, VMS Signs)	50	70	73
Man Lift	20	85	75
Pickup Truck	40	55	75
Scraper	40	85	84
Tractor	40	84	N/A
Welder/Torch	40	73	74

Note: Noise levels reported in this table are rounded to the nearest whole number.

[1] Usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.

[2] Maximum noise levels were developed based on Specification (Spec.) 721.560 from the Central Artery/Tunnel (CA/T) program to be consistent with the City of Boston's Noise Code for the "Big Dig" project.

[3] The maximum noise level was developed based on the average noise level measured for each piece of equipment during the CA/T program in Boston, Massachusetts.

[4] Since the maximum noise level based on the average noise level measured for this piece of equipment was not available, the maximum noise level developed based on Spec 721.560 would be used.

dBA = A-weighted decibels
ft = feet
HP = horsepower
kVA = kilovolt-amperes
L_{max} = maximum instantaneous noise level
N/A = not applicable
RCNM = Roadway Construction Noise Model
VMS = variable message sign

Source: Federal Highway Administration, *FHWA Highway Construction Noise Handbook*, Table 9.1, 2006.

Two types of short-term noise impacts could occur during construction of the proposed project. The first type involves construction crew commutes and the transport of construction equipment and materials to the site for the proposed project, which would incrementally increase noise levels on roads leading to the site. As shown in Table IV.C-13, there would be a relatively high single-event noise exposure potential at a maximum level of 84 dBA L_{max} with trucks passing at 50 feet.

The second type of short-term noise impact is related to noise generated during excavation, grading, and construction on the project site. Construction is performed in discrete steps, or phases, each with its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase.

Table IV.C-13 lists maximum noise levels recommended for noise impact assessments for typical construction equipment, based on a distance of 50 feet between the equipment and a noise receptor. Average maximum noise levels range up to 86 dBA L_{max} at 50 feet during the noisiest construction phases. The site preparation phase, including excavation and grading of the site, tends to generate the highest noise levels because earthmoving machinery is the noisiest construction equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings.

Impact NOI-1: Noise from construction activities at the Burton Park project site would result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. (S)

Potential temporary noise impacts associated with construction activities at both project sites are discussed below. As discussed, with implementation of recommended mitigation measures, these impacts would be less than significant.

Burton Park. Implementation of the proposed project at Burton Park would temporarily raise ambient noise levels in the vicinity of the project during the construction period, as discussed below. However, with implementation of the recommended mitigation measure, this impact would be less than significant by ensuring the project does not result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

The closest sensitive receptors to Burton Park include the single-family residences located approximately 95 feet north of the project site along Woodland Avenue. Project construction would result in short-term noise impacts on these adjacent receptors. As identified above, at 50 feet, the closest off-site sensitive receptors may be subject to short-term construction noise reaching 86 dBA L_{max} when construction is occurring at the project site boundary. At 95 feet, there would be a decrease of approximately 6 dBA over the reference noise levels due to noise attenuation with distance from the active construction area. Therefore, the closest off-site sensitive receptors may be subject to short-term construction noise reaching 80 dBA L_{max} when construction is occurring at the project site boundary.

As discussed above, construction noise would result in a temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. Implementation of the following mitigation measure for project construction would reduce potential construction period noise impacts for the indicated sensitive receptors to less-than-significant levels.

Mitigation Measure NOI-1: The project contractor shall implement the following measures during construction of the project:

- Equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.
- Place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the active project site.
- Locate equipment staging in areas that would create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the active project site during all project construction.
- Ensure that all general construction related activities are restricted to 8:00 a.m. and 6:00 p.m. Monday through Friday, and between 9:00 a.m. and 5:00 p.m. on Saturdays and Sundays. No construction shall be permitted on certain holidays.
- Designate a "disturbance coordinator" at the City of San Carlos who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler) and would determine and implement reasonable measures warranted to correct the problem. (LTS)

Implementation of the above mitigation measure would limit construction activities to the less noise-sensitive periods of the day and would reduce construction impacts to a less than significant level.

Highlands Park. Implementation of the proposed project at Highlands Park would temporarily raise ambient noise levels in the vicinity of the project during the construction period, as discussed below. However, with implementation of the recommended mitigation measure, this impact would be less than significant by ensuring the project does not result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

The closest sensitive receptors to Highlands Park include the single-family residences located approximately 70 feet north of the project site along Elston Court. Project construction would result in short-term noise impacts on these adjacent receptors. As identified above, at 50 feet, the closest off-site sensitive receptors may be subject to short-term construction noise reaching 86 dBA L_{max} when construction is occurring at the project site boundary. At 70 feet, there would be a decrease of approximately 3 dBA over the reference noise levels due to noise attenuation with distance from the active construction area. Therefore, the closest off-site sensitive receptors may be subject to short-term construction noise reaching 83 dBA L_{max} when construction is occurring at the project site boundary.

As discussed above, construction noise would result in a temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. Implementation of the Mitigation Measure NOI-1 for project construction would reduce potential construction period noise impacts for the indicated sensitive receptors to less-than-significant levels.

(5) Aircraft Noise. Airport related noise levels are primarily associated with aircraft engine noise made while aircraft are taking off, landing, or running their engines while still on the ground. Aircraft overflights contribute to the ambient noise levels in San Carlos. As noted in the existing

conditions discussion above, aircraft noise in the City of San Carlos is primarily related to aircraft operations at the San Carlos Airport. In addition, aircraft overflights associated with the San Francisco International Airport, Oakland International Airport, and San Jose International Airport are also audible from the project site.

Burton Park. The San Carlos Airport is the closest airport to the Burton Park project site and is located approximately 1 mile northeast of the site. However, no portion of the project site is within 60 dBA CNEL noise contours of this airport. Aircraft overflights associated with the San Francisco International Airport, Oakland International Airport, and San Jose International Airport are also audible from the project site. The San Francisco International Airport is located approximately 11 miles north of the project site, the Oakland International Airport is located approximately 15 miles north of the project site, and the San Jose International Airport is located approximately 20 miles southeast of the site. Although noise from aircraft activity is occasionally audible in the project vicinity, due to the distance of the project site from surrounding airports, no portion of the project site lies within the 60 dBA CNEL noise contours of any public airport. Therefore, the proposed project would not result in the exposure of park users to excessive noise levels from aircraft noise sources.

Highlands Park. The San Carlos Airport is the closest airport to the Highlands Park project site and is located approximately 1.75 miles northeast of the site. However, no portion of the project sites lie within the 60 dBA CNEL noise contours of the airport. Aircraft overflights associated with the San Francisco International Airport, Oakland International Airport, and San Jose International Airport are also audible from the project site. The San Francisco International Airport is located approximately 13 miles north of the project site, the Oakland International Airport is located approximately 14 miles north of the project site, and the San Jose International Airport is located approximately 21 miles southeast of the Highlands Park project site. Although noise from aircraft activity is occasionally audible in the project vicinity, due to the distance of the project site from surrounding airports, no portion of the project site lies within the 60 dBA CNEL noise contours of any public airport. Therefore, the proposed project would not result in the exposure of park users to excessive noise levels from aircraft noise sources.

c. Cumulative Impacts. Impacts related to noise are generally localized, rather than cumulative in nature, because each project area has a unique noise environment that is subject to existing noise standards and regulations that are imposed on new developments. The proposed project sites are located adjacent to residential neighborhoods where the primary sound sources in the area are the traffic on the local streets and the recreationalists at the parks. The potential noise impacts discussed in this EIR would not have a cumulatively considerable contribution to existing noise levels in the area at the same sensitive receptors. Additionally the proposed project would not exceed thresholds established by the General Plan for noise at nearby residential property lines for either project site. Therefore, implementation of the project would not result in a cumulatively considerable contribution to increases in ambient noise levels, and the cumulative impact would be less than significant.

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V. ALTERNATIVES

CEQA and the CEQA Guidelines require the analysis of a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the project's basic objectives and avoid or substantially lessen any of the significant effects of the project. The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice, even if those alternatives "impede to some degree the attainment of the project objectives, or would be more costly." An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

The following discussion is intended to inform the public and decision-makers of the relative environmental impacts of potentially feasible alternatives that would substantially lessen the proposed project's significant impacts. This chapter is divided into four sections. The first section briefly restates the objectives and impacts of the proposed project. The second section provides a brief discussion of alternatives that were considered but rejected from further analysis. The third section describes the principal characteristics of the alternatives considered in this section (i.e., the No Project alternative, the Reduced Project alternative, and the Only Field Lighting alternative) and briefly compares these alternatives to the proposed project. The last section discusses the environmentally-superior alternative.

A. PROJECT OBJECTIVES AND IMPACTS

The proposed project and its objectives are described in detail in Chapter III, Project Description. The potential environmental effects of implementing the proposed project are analyzed in Chapter IV, Setting, Impacts and Mitigation Measures.

1. Project Objectives

The objectives developed for the proposed project are an important part of the context for evaluating alternatives, and are listed below:

- Allow for additional hours of play at Burton Park on Flanagan Field and Highlands Park on Stadium Field and Highlands Field to assist in meeting the unmet demand for field space.
- Provide improved LED lighting systems at Madsen Field at Burton Park and Highlands Field at Highlands Park to improve field playing conditions and reduce energy use and existing levels of light spillover and glare.
- Improve safety and increase nighttime use of Flanagan Field at Burton Park and Stadium Field at Highlands Park by installing new LED lighting.
- Provide opportunities to maximize the use of Burton and Highlands Parks to help meet the existing unmet community demand for field space.

- Ensure that City parks and fields are managed consistently per the Field Use Policy and general City practices for all fields.

2. Project Impacts

For the proposed project (upgrades to existing lights, construction of new lights at Burton and Highlands Parks, and changes to operation of Highlands Park fields), the following operational impacts were identified as being significant but can be reduced to a less-than-significant level with implementation of mitigation measures TRA-1, TRA-2, TRA-3:

- During the weekday PM peak period under the Near-Term Plus Project and Cumulative Plus Project Conditions, the addition of project-generated traffic would result in a significant impact at the intersection of Cedar Street/Brittan Avenue, an all-way stop-controlled intersection.
- The addition of project-generated vehicular traffic would increase the potential for conflicts with pedestrians crossing streets or parking lots to access the parks which would be a significant impact.

Significant short-term construction-level impacts were also identified for the topics of noise and air quality emissions, and standard mitigation measures (NOI-1 and AIR-1) were identified to reduce these impacts to a less-than-significant level.

Additionally, analysis in this EIR and Initial Study (Appendix B) has determined that the following potential effects of the proposed project would have no impact or a less-than-significant one for the following topics: aesthetics; agricultural and forestry resources; biological resources; geology and soils; greenhouse gas emissions; hazards and hazardous materials; hydrology and water quality; land use and planning; mineral resources; population and housing; public services; recreation; tribal cultural resources; and utilities and service systems.

Per the discussion above, the alternatives evaluated in this chapter were chosen, in part, as they would avoid or substantially lessen the significant effects of the project identified above.

B. ALTERNATIVES CONSIDERED BUT REJECTED FROM FURTHER STUDY

The following alternatives to the project were considered by the City as Lead Agency but were rejected from further study for the reasons described below.

1. Off-Site Alternative

To meet the project objectives of providing more lit fields to allow for additional hours of field use and reduce the operational traffic impacts associated with the proposed project, this alternative assumes that the City would either purchase a site within the City and build new lit fields or would construct lights at an existing field, such as Crestview Field, per suggestions made by the public during the scoping period and comments in the Mahaddy report.[1] However, purchase of a new site for

[1] Mark Mahady & Associates, 2001. *Parks and Sports Fields Field Use and Agronomic Specifications.*

new lit fields is deemed to be infeasible, as the City does not own and has no control over a suitable site, and no City funds have been identified with which to purchase a site should one become available and construct new lit fields. Additionally, the City has considered the addition of new lighting at all City fields, including Crestview Field, and has determined that Burton and Highlands Parks were the most feasible fields for construction of a lighting project to provide more hours of field use to meet unmet demand for field use. Furthermore, during the approval of the Crestview Park Renovation in 2013-2014, the City Council determined that neither artificial turf nor field lights at Crestview would be part of the renovation project or funded. Therefore, this alternative is not further evaluated.

2. Addition of Artificial Turf to Existing Fields Alternative

To meet the project objectives of allowing additional hours of field use and maximize use of existing City fields, this alternative assumes that the City would convert natural grass fields to artificial turf at Burton Park and Stadium Field at Highlands Park and/or other City fields. While this alternative would allow more time that the fields were available for use, as stated in Chapter III, Project Description, the City has determined that there is no funding for implementation of this alternative. Additionally, the City has previously determined that conversion to artificial turf was not part of the proposed project being considered in this EIR. Should the City decide to convert any City field from grass to artificial turf in the future, staff will consider and evaluate the conversion as a separate project. Therefore, the Addition of Artificial Turf to Existing Fields alternative is not further evaluated in this EIR.

C. NO PROJECT ALTERNATIVE

1. Principal Characteristics

The No Project alternative, as required by CEQA, assumes the project sites, the existing fields and lights, the operation and use of the fields, the parking areas and signage would generally remain in their existing condition. The existing lighting would not be upgraded and new lighting would not be installed. Additionally, there would be no changes to existing conditions, no new lights, no lighting upgrades, and no changes to existing conditions in regards to the terms of the Settlement Agreement.

2. Analysis of the No Project Alternative

Development of the No Project alternative would preserve the existing conditions of the project sites. The short-term, construction–related noise and air quality impacts would not occur with this alternative, and the existing congestion at Cedar Street and Brittan Avenue would not be exacerbated with project-related traffic resulting in a significant impact. The levels of light spillover and glare from the existing lights would continue and would be much higher than under the proposed project. However, this alternative would not achieve any of the objectives of the proposed project as field use would not be increased, existing lighting systems would not be improved at the two parks, and use and management of Highlands Park fields would not be consistent with other City fields.

D. REDUCED PROJECT ALTERNATIVE

1. Principal Characteristics

The Reduced Project alternatives assumes that no new lights would be installed at Flanagan Field at Burton Park; however the existing lights at Madsen field would be upgraded to LED lights. All of the proposed project changes to Highlands Park fields (improved lights, new field and safety lights, changes in use of the fields and parking and signage per the project changes to the Settlement Agreement included in Appendix C) would continue to occur under this alternative.

2. Analysis of the Reduced Project Alternative

Development of the Reduced Project alternative would reduce and avoid the transportation impacts at the Cedar Street/Brittan Avenue intersection (impacts TRA-1 and TRA-2) as there would be fewer project-related trips going through the impacted intersection such that the project's contribution would be less-than-significant in the Near-Term Plus Project and Cumulative Plus Project conditions (for the traffic data related to this alternative see Appendix F). The affected intersection is directly adjacent to Burton Park, and therefore traffic associated with an increase in the hours of use of Flanagan Field when lit, directly affects this intersection. Changes in use at Highlands Park do not have a direct effect on this intersection. Mitigation measures TRA-1 and TRA-2 would not be needed under this alternative. The potential pedestrian impacts (impact TRA-3), and short-term, construction–related noise (impact NOI-1) and air quality impacts would continue to occur with this alternative, however the identified mitigation measures (mitigation measures TRA-3, NOI-1, AIR-1) would reduce these impacts to a less-than-significant level similar to the proposed project.

The Reduced Project alternative would partially meet the objectives of the project, as new field lighting would be installed at Stadium Field at Highlands Park and changes in use and management of the Highland Parks fields would allow for an increase in hours of play over existing conditions. However, this alternative would not contribute to additional hours of field use at Burton Park to assist in meeting unmet demand to the degree that the proposed project would. Additionally, the existing lighting at both parks would be updated which would significantly increase safety and decrease existing spillover light and glare.

E. ONLY FIELD LIGHTING ALTERNATIVE

1. Principal Characteristics

The Only Field Lighting alternative assumes that the proposed project changes to the Settlement Agreement restrictions would not occur and the stated restrictions and requirements of the Settlement Agreement would continue. Under this alternative, new LED field lights would be installed on the currently unlit Flanagan Field at Burton Park and the unlit Stadium Field at Highlands Park, as well as safety lighting, as necessary. The alternative also includes upgrading the existing metal-halide lighting at Madsen Field at Burton Park and Highlands Field at Highlands Park with LED lights.

2. Analysis of the No Changes in Highlands Park Field Use Alternative

Development of the Only Field Lighting alternative would not reduce and avoid the transportation impacts at the Cedar Street/Brittan Avenue intersection which would remain significant as there would be no change in the addition of project-related vehicle trips compared to the proposed project. Similar to the project, the identified mitigation measures TRA-1 and TRA-2 could be applied to this alternative to reduce these impacts to a less-than-significant level. The potential pedestrian impact at Highlands Park (TRA-3) would also continue to be significant under this alternative, but could be reduced to a less-than-significant level with implementation of Mitigation Measure TRA-3. Short-term, construction–related noise and air quality impacts would continue to occur with this alternative as the field lights would be constructed.

The Only Field Lighting alternative would partially meet some of the objectives of the project, as new and upgraded field lighting would be implemented at both parks similar to the proposed project. However, this alternative would not meet the objective of ensuring that City parks and fields are managed consistently per the Field Use Policy and general City practices for all fields, and would only partially meet the objective of maximizing the use of Highlands Park to help meet the existing unmet community demand for field space. This alternative would not contribute to additional hours of field use to the degree that the proposed project would.

F. ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires that the EIR identify the environmentally superior alternative in the strict sense that environmental impacts associated with its implementation would be the least of all scenarios examined (including the proposed project). Although CEQA requires the identification of the environmentally superior alternative, the decision-making process further considers the reasonableness and feasibility of all proposed alternatives, and CEQA does not require that the environmentally superior alternative be adopted.

This EIR concludes that the Reduced Project alternative is the environmentally superior alternative as it would reduce and avoid significant transportation impacts and would significantly reduce existing light spillover and glare from existing field lighting.

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VI. OTHER CEQA CONSIDERATIONS

As required by CEQA, this chapter discusses the following types of impacts that could result from implementation of the proposed project: growth-inducing impacts; significant irreversible changes; effects found not to be significant; and significant unavoidable effects.

A. GROWTH INDUCEMENT

A project is considered growth-inducing if it would directly or indirectly foster substantial economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Examples of projects likely to have significant growth-inducing impacts include extensions or expansions of infrastructure systems beyond what is needed to serve project-specific demand, and development of new residential subdivisions or industrial parks in areas that are only sparsely developed or are underdeveloped. Typically, development projects on sites that are designated for development and surrounded by existing suburban uses are not considered adversely growth-inducing because growth in areas that already have development and infrastructure available to serve new development are generally considered infill and is environmentally beneficial.

Implementation of the proposed project would not result in adverse growth-inducing impacts within the City of San Carlos. The proposed project would install new field lighting on currently unlit fields at Burton and Highlands Parks and upgrade the existing lighting at the parks with light-emitting diode LED lights. In addition, the project also involves changes in use of the fields at Highlands Park to make field use consistent with the rules governing all other City fields. Changes in use would affect the terms of the 2010 Settlement Agreement regarding the use of Highlands Park. The proposed project would not result in population growth. Therefore, the proposed project would not result in a significant impact on public facilities. Additionally, both project sites are designated as Park and their use is consistent with General Plan policies related to parks.

In addition, the proposed project would occur on sites within Burton and Highlands Parks, which are located in existing urbanized neighborhoods. The sites are already served by utilities and public service systems and would not necessitate road or other infrastructure extensions into undeveloped areas. As such, the proposed project would not directly or indirectly lead to the development of greenfield sites.

The installation of new and replacement field lighting at Burton and Highlands Parks and the changes in use of the fields at Highlands Park that would occur as a result of the proposed project would not be considered growth inducing.

B. SIGNIFICANT IRREVERSIBLE CHANGES

CEQA requires that EIRs assess whether the proposed project would result in significant irreversible changes to the physical environment. The CEQA Guidelines discuss three categories of significant irreversible changes that should be considered. Each is addressed below.

1. Changes in Land Use Which Commit Future Generations

The project sites consist of existing fields at Burton and Highlands Parks. Burton Park is bounded by Woodland Avenue and Chestnut Street to the north, Brittan Avenue to the east, Arroyo Avenue to the west, and Cedar Street to the southwest. Highlands Park is bounded by Aberdeen Drive to the east and Melendy Drive to the south. In addition, both sites are surrounded by residential uses.

The City of San Carlos General Plan Map designates both project sites as Park land uses. This land use designation allows for active and passive public parks. Park lands are for outdoor and indoor recreation including playing fields, playgrounds, community centers and other appropriate recreational uses.

The City of San Carlos Zoning Map identifies both project sites as Park (PK). Permitted uses in the PK District include community gardens and park and recreation facilities.

Because the proposed project would occur on land designated for Park uses, it would not commit future generations to a significant change in land use.

2. Irreversible Damage from Environmental Accidents

During construction of the new lights, hazardous materials such as vehicle fuels and lubricants for heavy equipment may be required. However, the length of time for project construction would be short and the area that would be disturbed to construct the bases for the poles would be small, and therefore hazardous materials would not be used in sufficient quantities to pose any threats to human or environmental health. In addition, compliance with federal, State, and local regulations would reduce the potential for environmental accidents to a less-than-significant level. No irreversible changes – such as those which might result from construction of a large-scale mining project, a hydroelectric dam project, or other institutional project – would result from development of the proposed project.

3. Consumption of Non-Renewable Resources

Consumption of non-renewable resources includes conversion of agricultural lands, loss of access to mining reserves, and use of non-renewable energy sources. The State Department of Conservation designates the project sites as "Urban and Built-Up Land," and the sites are located in urbanized neighborhoods of San Carlos. Therefore, no existing agricultural lands would be converted to non-agricultural uses. In addition, the project sites do not contain any known mineral resources and do not serve as a mining reserve. Therefore, implementation of the proposed project would not result in the loss of access to mining reserves.

Construction of the proposed project would require the use of energy, including energy produced from non-renewable resources. Energy consumption would also occur during the operational period of the proposed project as a result of demand for electricity by the new lighting systems at the two

parks. However, the energy required would be minimal and would not change substantially from current usage. Moreover, the replacement of the existing metal halide light fixtures with energy-efficient LED lighting would reduce energy use associated with the existing lighting systems. The proposed project would not require the construction of major new lines to deliver energy as electric service is already provided to the area.

C. EFFECTS FOUND NOT TO BE SIGNIFICANT

Each of the CEQA-defined environmental factors is considered either within Chapter IV of this Draft EIR or in the Initial Study contained in Appendix B and summarized below. The environmental topics analyzed in Chapter IV, Setting, Impacts, and Mitigation Measures, represent those topics which generated the greatest potential controversy and expectation of adverse impacts. For the following topics, all impacts were determined to be less than significant.

1. Aesthetics/Visual Resources

The project sites are not within any scenic vista designated by the City of San Carlos, or within a State Scenic Highway. Additionally, the proposed project would not block public views of a scenic vista. Installation of the new and replacement lighting would introduce new sources of light and glare at the project sites but not at levels that exceed the identified impact thresholds.

2. Agricultural and Forestry Resources

The project sites are located within existing parks and are surrounded by residential uses. There are no agricultural resources located on or near the project sites. The sites are classified as "Urban and Built-Up Land" by the State Department of Conservation.

3. Air Quality

The proposed project supports the goals of the Clean Air Plan and would not conflict with any of the control measures identified in the Plan or designed to bring the region into attainment. The proposed project does not include a change in land use, and would not substantially increase regional VMT or vehicle trips. The proposed project would not hinder the region from attaining the goals outlined in the Clean Air Plan.

The Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines contain screening criteria that provide a conservative indication of whether the project would exceed the criteria pollutant construction thresholds. According to the BAAQMD, if the screening criteria are met, construction of a proposed project would result in a less-than-significant construction emission impact. As described in the Initial Study, the proposed project meets the screening criteria and therefore would not have the potential to result in significant construction-related emissions.

Construction emissions from the proposed project would be well below the BAAQMD significance criteria and would not result in the generation of substantial emissions. The project would not exceed the BAAQMD construction emission thresholds; however, the BAAQMD requires that all projects implement best management practices to reduce construction fugitive dust impacts to a less-than-significant level. With implementation of Mitigation Measure AIR-1, construction of the proposed project would not substantially contribute to an air quality violation.

The temporary effects of construction activities could cause airborne dust during construction of the project which could pose a nuisance to areas immediately surrounding the sites. However, these impacts would be of a temporary duration and would not affect a substantial number of people.

The proposed project would not conflict with any applicable congestion management program for designated roads or highways, the San Mateo County Transportation Authority, or other agency plans. The proposed project would not have a significant cumulative air quality impact. Implementation of the proposed project would not create objectionable odors affecting a substantial number of people or subject persons to objectionable odors.

4. Biological Resources

The project sites are both entirely covered with urban land uses including natural grass and artificial turf. While night lighting may have adverse consequences on wildlife, the wildlife species occurring in the vicinity of the project sites are relatively common urban species that have adapted to artificial night lighting and would therefore not be substantially affected. No State of federally protected plant or animal species are known to occur within the project sites. The project would not remove any trees.

5. Cultural Resources

The proposed project would include the installation of new lighting field lighting and replacement field lighting at Burton and Highlands Parks. Minor excavation would occur associated with the installation of new light poles. In addition, the sites were previously disturbed when developing the sports fields. There is no documentation that suggests archaeological, paleontological, or human remains are present within the project sites. However, it is possible that currently unknown cultural resources, paleontological resources, or human remains may be uncovered beneath the surface. However, implementation of standard conditions of approval would ensure that potential impacts associated with the disturbance of previously undiscovered subsurface archaeological resources and paleontological resources as well as to human remains would be reduced to less-than-significant levels.

6. Greenhouse Gas Emissions

The proposed project would generate greenhouse gas emissions during both the construction and operation periods. Implementation of Mitigation Measure AIR-1 would reduce construction period GHG emissions to a less-than-significant level by reducing the amount of construction vehicle idling and by requiring the use of properly maintained equipment.

7. Hazards and Hazardous Materials

Small quantities of commercially available hazardous material could be used during project construction activities (e.g., diesel fuels, oils, and lubricants) and for field maintenance within the project sites, these materials would not be used in sufficient quantities to pose a threat to human or environmental health. The amount of these hazardous materials present during construction would be limited, would be in compliance with existing federal, State, and local regulations, and would not be considered a significant hazard. In addition, the project sites do not include any active storage sites listed by the Regional Water Quality Control Board, nor are they located within the vicinity of a public or private airstrip.

8. Hydrology and Water Quality

The proposed project consists of installation of new and replacement field lighting at Burton and Highlands Parks. The proposed project involves minimal excavation on existing grass and artificial turf fields and would not substantially alter the existing hydrologic conditions on the site. The proposed project would not violate any water quality standards, deplete groundwater supplies, substantially alter the existing drainage pattern of the sites, or substantially degrade water quality because the site is currently developed.

9. Land Use and Planning

The proposed project would not physically divide an established community. In addition, the project would not conflict with General Plan policies adopted for the purpose of avoiding or mitigating an environmental effect. There are no habitat conservation or natural community conservation plans adopted for the sites. Therefore, there are no impacts associated with land use and planning.

10. Mineral Resources

No known mineral resources are present on or near the project sites. The proposed project would not result in the loss of availability of a known mineral resource.

11. Noise

For the topic of noise, the proposed project would not expose persons or generate noise levels or groundbourne vibration in excess of City standards nor would it result in a substantial permanent increase in ambient noise levels. With compliance with Mitigation Measure NOI-1 and City standards and ordinances, temporary noise from project construction would be a less-than–significant impact.

12. Population and Housing

The project would not displace any residents necessitating the construction of replacement housing elsewhere. The proposed project would not result in the construction of residential units. The proposed project would not require the extension of new infrastructure or services that could induce additional population growth in the area.

13. Public Services

The project sites are located on existing fields at Burton and Highlands Parks where public facilities and services are already in place. As such, no impacts to public facilities or services would result, as detailed in the Initial Study.

14. Recreation

The proposed project includes the installation of new and updated field lighting at Burton and Highlands Parks and revisions to the 2010 Settlement Agreement to make field use at Highlands Park consistent with other City fields. The proposed project would not require the construction or expansion of existing recreational facilities or result in substantial physical deterioration of existing recreational facilities as the City would continue with standard field management and maintenance practices at Burton and Highlands Parks.

15. Transportation/Traffic

The proposed project would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, and the potential impact to roadway systems would be less than significant. Project generated traffic would result in a potentially significant impact during the weekday PM peak period under the Near-Term Plus Project Condition and Cumulative Plus Project Condition at the Cedar Street and Brittan Avenue intersection near Burton Park. However, these impacts were identified as less than significant with implementation of Mitigation Measures TRA-1 and TRA-2. Additionally, this analysis determined that the addition of project-generated vehicular traffic could increase the potential for conflicts with pedestrians crossing streets or parking lots to access the parks; however Mitigation Measure TRA-3 would reduce this impact to a less-than-significant level. Roadways would not be significantly impacted by the number of trips associated with short-term construction traffic. There would be no significant impacts on the City's roadways during the construction process. The proposed project would not have any impact on air traffic patterns. The proposed project would not change the existing traffic and circulation system. The proposed project would not alter emergency access to the sites, and would not significantly change circulation within or adjacent to the sites. It would not remove facilities supporting alternative transportation, such as bike racks, paths, or bus stops. The proposed project does not conflict with alternative transportation plans. Therefore, potential impacts related to transportation and traffic would be less than significant.

16. Tribal Cultural Resources

The project site is not listed on, and does not appear to be eligible for listing on, the California Register of Historical Places, or a local register. Additionally, consultation requests were sent to Native American tribes traditionally and culturally associated with the area, and none of the tribes contacted requested consultation.

17. Utilities and Service Systems

The proposed project includes the installation of new and updated field lighting at Burton and Highlands Parks, which are currently served by existing utility systems. The proposed project would not increase water demand, wastewater generated, and solid waste.

D. SIGNIFICANT UNAVOIDABLE ENVIRONMENTAL IMPACTS

Implementation of the proposed project would not result in any significant unavoidable impacts.

VII. REPORT PREPARATION

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B. REFERENCES

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