



SAN FRANCISCO PLANNING DEPARTMENT

Notice of Availability of and Intent to Adopt a Mitigated Negative Declaration

Date: February 8, 2012
Case No.: 2011.0148E
Project Title: **Minnie and Lovie Ward Playfields Renovation**
Project Address: 650 Capitol Avenue
Zoning: P (Public Use) District
40-X Height and Bulk District
Block/Lot: 7068/001
Project Sponsor: Dan Mauer, San Francisco Recreation and Park Department
(415) 581-2542
Staff Contact: Don Lewis – (415) 575-9095
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To Whom It May Concern:

This notice is to inform you of the availability of the environmental review document concerning the proposed project as described below. The document is a Preliminary Mitigated Negative Declaration (PMND), containing information about the possible environmental effects of the proposed project. The PMND documents the determination of the Planning Department that the proposed project could not have a significant adverse effect on the environment. Preparation of a Mitigated Negative Declaration does not indicate a decision by the City to carry out or not to carry out the proposed project.

Project Description: The Minnie and Lovie Ward Recreation Center and Playfields, formerly Ocean View Park and Recreation Center, is located in the Oceanview neighborhood at 650 Capitol Avenue. The proposed project would renovate the approximately 6.1-acre playfields and would include replacement of the existing grass turf with synthetic turf and installation of three 60-foot-tall light standards, three 70-foot-tall light standards, and six 80-foot-tall light standards. The new light standards would be placed on the perimeter of the field area and would be controlled by an automated control system, which would turn the lights on at sunset and turn the lights off upon field closure at 10:00 p.m. daily. The project would also include replacement of the existing bleachers at the baseball field; installation of new bleachers at the softball/little league field; two new volleyball courts; replacement of the existing metal chain link fence with black vinyl fence; replacement of baseball and softball backstops and baseball dugout areas; refurbishment of the pedestrian walkway; installation of new drinking fountains, benches, bike racks, trash and recycling cans; modification to the existing retaining wall in the northeast field area; installation of irrigation system for existing vegetation; removal of the existing cargo container; improve infrastructure to comply with ADA requirements; and removal and replacement of up to 21 on-site trees due to poor suitability and condition.

The PMND is available to view or download at <http://tinyurl.com/meacases>. Paper copies are also available at the Planning Information Center (PIC) Counter at 1660 Mission Street, 1st Floor. If you have questions concerning environmental review of the proposed project, contact Don Lewis at (415) 575-9095.

Within 20 calendar days following publication of the PMND (i.e., by 5:00 p.m. on **February 28, 2012**), any person may:

- 1) Review the PMND as an informational item and take no action.
- 2) Make recommendations for amending the text of the document. The text of the PMND may be amended to clarify or correct statements and/or expanded to include additional relevant issues or cover issues in greater depth. One may recommend amending the text without the appeal described below. - OR-
- 3) Appeal the determination of no significant effect on the environment to the Planning Commission in a letter which specifies the grounds for such appeal, accompanied by a check for \$510 payable to the San Francisco Planning Department.¹ An appeal requires the Planning Commission to determine whether or not an Environmental Impact Report must be prepared based upon whether or not the proposed project could cause a substantial adverse change in the environment. Send the appeal letter to the Planning Department, Attention: Bill Wycko, 1650 Mission Street, Suite 400, San Francisco, CA 94103. **The letter must be accompanied by a check in the amount of \$510.00 payable to the San Francisco Planning Department, and must be received by 5:00 p.m. on February 28, 2012.** The appeal letter and check may also be presented in person at the PIC Counter on the first floor at 1660 Mission Street, San Francisco.

In the absence of an appeal, the Mitigated Negative Declaration shall be made final, subject to necessary modifications, after 20 days from the date of publication of the PMND.

¹ Upon review by the Planning Department, the appeal fee may be reimbursed for neighborhood organizations that have been in existence for a minimum of 24 months.



SAN FRANCISCO PLANNING DEPARTMENT

Preliminary Mitigated Negative Declaration

Date: February 8, 2012
Case No.: 2011.0148E
Project Title: Minnie and Lovie Ward Playfields Renovation
Project Address: 650 Capitol Avenue
Zoning: P (Public Use) District
40-X (40-foot height limit; no bulk limit) Height and Bulk District
Block/Lot: 7068/001
Project Site Size: 267,000 square feet (6.1 acres)
Project Sponsor: Dan Mauer, San Francisco Recreation and Park Department
(415) 581-2542
Lead Agency: San Francisco Planning Department
Staff Contact: Don Lewis – (415) 575-9095
don.lewis@sfgov.org

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PROJECT DESCRIPTION

The Minnie and Lovie Ward Recreation Center and Playfields, formerly Ocean View Park and Recreation Center, is located in the Oceanview neighborhood in the southwestern area of San Francisco at 650 Capitol Avenue. The proposed project would renovate the approximately 6.1-acre playfields and would include replacement of the existing grass turf with synthetic turf and installation of three 60-foot-tall light standards, three 70-foot-tall light standards, and six 80-foot-tall light standards. The new light standards would be placed on the perimeter of the field area and would be controlled by an automated control system, which would turn the lights on at sunset and turn the lights off upon field closure at 10:00 p.m. daily. The project would also include replacement of the existing bleachers at the baseball field; installation of new bleachers at the softball/little league field; two new volleyball courts; replacement of the existing metal chain link fence with black vinyl fence; replacement of baseball and softball backstops and baseball dugout areas; refurbishment of the pedestrian walkway; installation of new drinking fountains, benches, bike racks, trash and recycling cans; modification to the existing retaining wall in the northeast field area; installation of irrigation system for existing vegetation; removal of the existing cargo container; improve infrastructure to comply with ADA requirements; and removal and replacement of up to 21 on-site trees due to poor suitability and condition.

FINDING

This project could not have a significant effect on the environment. This finding is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15064 (Determining Significant Effect), 15065 (Mandatory Findings of Significance), and 15070 (Decision to prepare a Negative Declaration), and the following reasons as documented in the Initial Evaluation (Initial Study) for the project, which is attached.

Mitigation Measures are included in this project to avoid potentially significant effects.

cc: Supervisor Avalos, District 11

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INITIAL STUDY

Case Number 2011.048E – Minnie and Lovie Ward Playfields Renovation

Table of Contents

	<i>Page</i>
A. Project Description.....	1
B. Project Setting.....	16
C. Compatibility with Existing Zoning and Plans	17
San Francisco Planning Code	17
Plans and Policies	17
Project Approvals.....	20
D. Summary of Environmental Effects	21
E. Evaluation of Environmental Effects	22
1. Land Use and Land Use Planning	22
2. Aesthetics	24
3. Population and Housing.....	32
4. Cultural and Paleontological Resources	33
5. Transportation and Circulation.....	37
6. Noise	48
7. Air Quality	52
8. Greenhouse Gas Emissions.....	66
9. Wind and Shadow.....	76
10. Recreation.....	77
11. Utilities and Service Systems.....	79
12. Public Services	83
13. Biological Resources	85
14. Geology and Soils.....	97
15. Hydrology and Water Quality	101
16. Hazards and Hazardous Materials.....	119
17. Mineral and Energy Resources	148
18. Agriculture Resources	150
19. Mandatory Findings of Significance.....	151
F. Mitigation and Improvements Measures	152
G. Neighborhood Notification	154
H. Determination.....	155
I. List of Preparers	156

List of Figures

Figure 1	Project Location	2
Figure 2	Aerial View of the Project Site	4
Figure 3	Proposed Site Plan	9
Figure 4	Existing and Proposed Views (Plymouth Avenue and Minerva Street)	27
Figure 5	Existing and Proposed Views (Capitol Avenue and Montana Street).....	28

List of Tables

Table 1	Existing Weekly Schedule During High-Use Periods (Spring)	7
Table 2	Project Characteristics.....	10
Table 3	Anticipated Construction Activities Schedule	13
Table 4	Estimated Future Weekly Schedule During High-Use Periods (Spring)	15
Table 5	Ambient Air Quality Standards and Bay Area Attainment Status	55
Table 6	Peak Day Construction-Related Criteria Pollutant Emissions (Pounds/Day)	57
Table 7	Peak Day Operation-Related Criteria Pollutant Emissions (Pounds/Day)	60
Table 8	Health Risk Assessment Results	63
Table 9	GHG Reductions from the AB 32 Scoping Plan Sectors	69
Table 10	Regulations Applicable to the Proposed Project.....	73
Table 11	Summary of Literature Review: Runoff and Leachate from Synthetic Playfields	107
Table 12	Synthetic Turf Standards, Screening Levels, and Hazardous Waste Criteria—Soluble Concentrations.....	113

INITIAL STUDY

Case Number 2011.0148E – Minnie and Lovie Ward Playfields Renovation

A. PROJECT DESCRIPTION

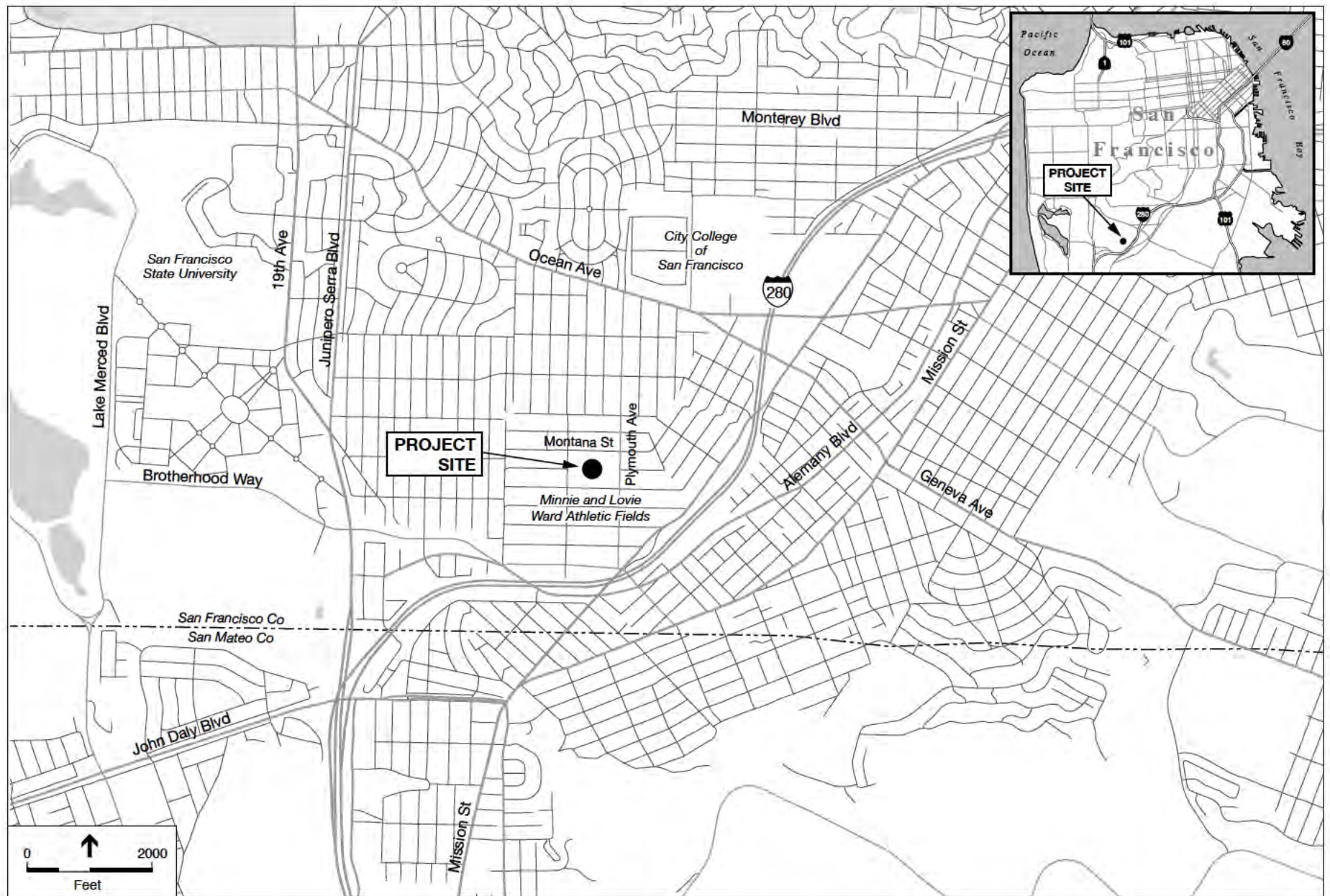
Project Overview

The project sponsor, the San Francisco Recreation and Park Department (SFRPD), is proposing to renovate the Minnie and Lovie Ward Playfields, an approximately 267,000-square foot (6.1 acres) public sports field facility located at the intersection of Capitol Avenue and Montana Avenue in the Ocean View neighborhood and adjacent to the Minnie and Lovie Ward Recreation Center (see **Figure 1**). The existing athletic fields are composed of grass turf in a rectangular layout with a varsity baseball field located in the southeast corner and a softball/little league size baseball field in the southwest corner. Soccer and other ground sports are played between these two areas.

The proposed project would include replacing the turf grass athletic fields with synthetic turf. The existing athletic fields are in poor condition due primarily to poor irrigation and drainage, minor gopher damage, and lack of maintenance. The field layout is also outdated because its configuration does not allow for a second full-size soccer field despite the available space. In addition, the fields are unable to formally accommodate lacrosse, football, volleyball, and other athletic uses. These conditions limit the usability of the fields. The project would also include installation of new field lighting, replacement of the player benches and spectator seating, and various other modifications intended to improve the overall conditions of the facility and increase the amount of play time¹ available on the athletic fields. With project implementation, the project site would remain in its current use as an athletic field complex within an urban park.

Currently, the playfields are able to accommodate approximately 1,796 hours of annual play for soccer or 3,580 hours for baseball/softball. Installation of synthetic turf would allow for use in wet weather conditions and installation of lighting would allow for longer evening use of the fields. Upon completion of the renovation, the field could be utilized as two full-size soccer fields

¹ Calculated as play hours per year.



SOURCE: ESA

Case No. 2011.0148E: Minnie and Lovie Ward Athletic Fields

Figure 1
Project Location

or a full-size soccer field and a baseball field. With implementation of the proposed project, it is anticipated that approximately 5,366 new hours of ground sports play, or 3,570 additional hours of baseball/softball play would be available. Total hours at project buildout would be approximately 7,162 hours of ground sports play, or 7,150 hours of baseball/softball play.

Project Location

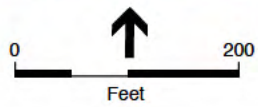
The Minnie and Lovie Ward Recreation Center (and Playfields), formerly the Ocean View Recreation Center, is located within the Ocean View neighborhood. The project site is located at 650 Capitol Avenue. The site is bounded by Lobos Street to the south; Plymouth Avenue to the east; and Capitol Avenue to the west. The Minnie and Lovie Ward Recreation Center and Montana Street are to the north of the athletic fields. Sheridan Elementary School is located directly southwest of the project site at the southeast corner of Capitol Avenue and Lobos Street. An aerial view of the project site is provided in **Figure 2**. The site is located on public transportation routes provided by Muni lines M and 54.

Project Characteristics

Existing Facilities and Use

The entire park is approximately 10 acres in size and occupies the entire block. Single-family residences are across the street on all four sides. The park is divided by several retaining walls to manage the grade change (north to south) of approximately 20 feet, and the parcel is terraced into two levels. The upper level (north level), containing the recreation center, gymnasium, teen building, and courtyard, was renovated in 2008. The playing fields and tennis courts were not included in that renovation.

The campus-style layout of the upper level features four separate buildings connected by a loggia (covered walkway). Other multipurpose rooms, including an arts and crafts room, preschool, kitchen, and weight room, form the spine of the recreation space. An enclosed central plaza serves as another multipurpose area. Outdoor improvements included as part of the 2008 renovation included play structures for children and toddlers, a hillside slide, entry plaza, picnic and barbecue areas, and paths for strollers and pedestrians. Tennis and basketball courts are located at the northeastern corner of the park and include four existing light standards similar in height to utility poles on streets surrounding the park. Lighting from the standards is controlled



SOURCE: Google Maps

Case No. 2011.0148E: Minnie and Lovie Ward Athletic Fields

Figure 2
Aerial View of the Project Site

by an automated control system that turns the lights on at sunset and switches off at 10:00 p.m., seven days a week. The building structures, as well as the athletic fields, are surrounded by established landscaping trees and low landscape plantings.

The current athletic fields at the Minnie and Lovie Recreation Center are composed of grass turf in a rectangular layout. The approximate area of the field is 267,000 square feet (6.1 acres). There is a varsity baseball field located in the southeast corner and a softball/little league size baseball field in the southwest corner. Soccer and other ground sports athletics are played between these two areas. The fields are currently enclosed on three sides by a rusting metal chain link fence varying in height from 10 to 20 feet. Entry gates allow access to the fields near the corner of Lobos Street and Capitol Avenue and Lobos Street and Plymouth Avenue, and on Lobos Street halfway between Capitol Avenue and Plymouth Avenue. The fields can also be accessed from the recreation center area on the north as well as from the west at Minerva Street and Capitol Avenue. In addition, sections of the fence on the east side of the park near the intersection of Minerva Street and Plymouth Avenue have collapsed, allowing additional access to the park. The northern edge of the field is bound by retaining walls. Each baseball field includes a backstop and players' benches. The varsity baseball field also has spectator bleachers that seat approximately 150 people. Just south of the fields is a sloped landscape area which has an approximate 10-foot grade change between the field and the perimeter sidewalk on Lobos Street. Three picnic tables are located near the northwestern corner of the playfields. A large cargo container containing sand, soil, and other landscaping material is located at the western entrance to the park, where Minerva Street intersects Capitol Avenue.

The playfields are currently in poor condition resulting from an antiquated irrigation system (the system does not cover the entire field, requiring sections to be manually watered), poor drainage, uneven playing surfaces, gopher damage, sporadic garbage dumping, and limited upkeep of the playfields. The playfields are susceptible to runoff from the hillside on the northeast side of the field as the hillside soils currently becomes saturated following rain events and 'leak' onto the field surface below due to insufficient drainage. As a result, the grass area at the bottom of the slope is generally muddy or soggy, inhibiting safe play. Large swaths of the grass athletic field are either wet and muddy or too dry, depending on the season, causing the grass to be easily damaged during regular play. Currently, SFRPD has one full-time equivalent (FTE) employee for maintenance of the entire park, including the recreation center and athletic field. This staff is

primarily used for the recreation center and facilities, and minor maintenance (garbage removal, etc.) of the playing fields, according to SFRPD.

The playfields open at 6:00 a.m. and are available for permit reservations from 9:00 a.m. to 5:00 p.m. during the winter; 9:00 a.m. to 7:00 p.m. during the fall and spring; and 9:00 a.m. to 8:00 p.m. during summer. The fields are closed to all use during and following rain events.

The playing surface is a multi-use field and can be reserved as either a soccer field or baseball field. The little league/softball field can be used concurrently with the soccer or baseball field. Players or spectators who drive can use on-street parking (unlimited except for street sweeping times), where available. Formal use of the playfields is allocated via two reservation methods: through an advanced reservation system or a first-come, first-served occasional reservation basis. Advanced, season-long reservations are made on a quarterly basis via online application, with September through November and March through May being the more heavily requested (and used) seasons. Approximately 95 percent of reservations for the playfields are made via advanced, online application. First-come, first-served occasional reservations are available up to two weeks before the date of use.

The playfields are primarily used by San Francisco schools, organizations, and residents; however, out-of-city organizations and groups are allowed to reserve fields at a higher fee rate. Weekday assignments are prioritized in the following order: schools (games and practices), non-profit youth leagues and programs that serve San Francisco residents, and finally other youth programs. When not reserved, the fields are available for open play and other recreational activities appropriate for athletic fields.

Currently, the playfields are primarily used for practice Monday thru Friday from 3:30 p.m. to dark and on weekends from 8:00 a.m. to dark as either a single baseball field or a soccer field, when weather conditions allow. Soccer or baseball games are primarily held on weekends. The smaller baseball field is rarely used. The field also hosts occasional, informal, weekend volleyball matches. Although the field is available for reservation between 9:00 a.m. and 3:30 p.m. year-round, few if any permits are issued during this time. Some informal use does occur during these hours. Approximately three one-day rugby tournaments are held each year.

Table 1 summarizes typical existing field use during spring, which is the highest-use period.

**TABLE 1
EXISTING WEEKLY SCHEDULE DURING HIGH-USE PERIODS (SPRING)**

Day	Time	Field Use^a	Expected Use Type	Players and Referees/Field	Spectators/Field	Total # of People
<i>Monday</i>	9:00 a.m. – 3:00 p.m.	1	Open Play	Up to 10 (2 hours each)	0	Up to 30
	3:30 p.m. – 5:00 p.m.	1	Youth Baseball Practice	12 – 18 (1 practice period)	5	Up to 23
	5:00 p.m. – 6:30 p.m.	1	Open Play	Up to 20	0	Up to 20
	6:30 p.m. – dark	1	Open Play	Up to 20	0	Up to 20
<i>Tuesday</i>	9:00 a.m. – 3:00 p.m.	1	Open Play	Up to 10 (2 hours each)	0	Up to 30
	3:30 p.m. – 5:00 p.m.	1	Youth Baseball Practice	12 – 18 (1 practice period)	5	Up to 23
	5:00 p.m. – 6:30 p.m.	1	Open Play	Up to 20	0	Up to 20
	6:30 p.m. – dark	1	Open Play	Up to 20	0	Up to 20
<i>Wednesday</i>	9:00 a.m. – 3:00 p.m.	1	Open Play	Up to 10 (2 hours each)	0	Up to 30
	3:30 p.m. – 5:00 p.m.	1	Youth Baseball Practice	24 – 36 (2 practice periods)	5	Up to 82
	5:00 p.m. – 6:30 p.m.	1	Youth Soccer Practice	24 – 30 (1 practice period)	5	Up to 35
	6:30 p.m. – dark	1	Open Play	Up to 20	0	Up to 20
<i>Thursday</i>	9:00 a.m. – 3:00 p.m.	1	Open Play	Up to 10 (2 hours each)	0	Up to 30
	3:30 p.m. – 5:00 p.m.	1	Youth Soccer Practice	24 – 30 (1 practice period)	5	Up to 35
	5:00 p.m. – 6:30 p.m.	1	Youth Soccer Practice	24 – 30 (1 practice period)	5	Up to 35
	6:30 p.m. – dark	1	Open Play	Up to 20	0	Up to 20
<i>Friday</i>	9:00 a.m. – 3:00 p.m.	1	Open Play	Up to 10 (2 hours each)	0	Up to 30
	3:30 p.m. – 5:00 p.m.	1	Youth Soccer Practice	24 – 30 (1 practice period)	5	Up to 35
	5:00 p.m. – 6:30 p.m.	1	Youth Soccer Practice	24 – 30 (1 practice period)	5	Up to 35
	6:30 p.m. – dark	1	Open Play	Up to 20	0	Up to 20
<i>Saturday</i>	8:00 a.m. – 6:30 p.m.	1	Youth Soccer Games	32 – 36 (up to 3 games)	32 – 36	Up to 216 daily (72 per game)
	6:30 p.m. – dark	1	Open Play	10 – 28	0	Up to 28
<i>Sunday</i>	8:00 a.m. – 6:30 p.m.	1	Youth Soccer Games	32 – 36 (up to 2 games)	32 – 36	Up to 144 daily (72 per game)
	6:30 p.m. – dark	1	Open Play	10 – 28	0	Up to 28

^a SFRPD indicates that the little league baseball/softball field is rarely used under existing conditions due to size, configuration, and condition.

SOURCE: SFRPD, 2011

Project Components

A conceptual illustration of the project site plan is shown in **Figure 3**. Specific project features are summarized in **Table 2** and are described in detail on the following pages.

Playfields Renovation

The proposed project would replace the existing turf grass playing surface with synthetic turf. The total surface area replaced would be approximately 267,000 square feet, or 6.1 acres. The current configuration of the two baseball/softball fields would be maintained, including a new clay pitcher's mound installed on the varsity baseball field. Upon completion of the renovation, the playfields could be utilized as two full-size soccer fields or a full-size soccer field and a baseball field. Each full-size soccer field could also be used as two youth soccer fields, for a total of four youth fields. Simultaneous soccer play on more than one full-size field or on the baseball fields could not occur due to the overlap of the soccer fields with the baseball outfields. The recreational fields would also be marked for adult and youth soccer, men's and women's lacrosse, rugby, volleyball, and football. Many of the lines would overlap on this multi-sport layout. The baseball/softball backstops and dugout areas would be replaced, as would the bleacher seating behind the varsity baseball field. Additional bleachers would be installed at the softball/little league baseball field.

The proposed synthetic turf would meet or exceed all parameters established by the *San Francisco Recreation and Park Department Synthetic Playfields Task Force Findings and Department Recommendations* and the turf specification developed in coordination with the Department of the Environment.² The synthetic turf would consist of four components: fiber, infill, backing, and underlayment. The fiber, which would consist of polyethylene, would be grass-like in appearance. The infill, which would be used to provide stability, would be comprised of about 70 percent styrene butadiene rubber (SBR) and 30 percent sand. The SBR infill, commonly called "crumb rubber", is recovered from scrap tires and from the tire re-treading process. The fiber and infill would be supported by a backing made up of a combination of permeable woven and unwoven polypropylene fabrics that provide strength and vertical drainage. Underlayment would

² The Synthetic Playfields Task Force met for five months in 2008, from June through October. The Task Force was comprised of 16 members from various CCSF agencies, and included other experts, such as a representative from California Environmental Protection Agency and a doctor from University of California, San Francisco. The findings of the task force are described in greater detail in Section E.16, Hazards and Hazardous Materials.



- LEGEND**
- ① Existing Community Center to Remain
 - ② Existing Community Center Entry Area
 - ③ Varsity Baseball Field with Clay Mound
 - ④ Little League/ Softball Field
 - ⑤ (2) 70 yd X 105 yd Soccer (4) Small-sided Soccer (2) Men Lacrosse (2) Women Lacrosse (1) Rugby Line (1) Football Hash Marks
 - ⑥ New 16' Tall Outer Fencing, Typ.
 - ⑦ Chain Link Fencing Dugout
 - ⑧ (4) Open Bullpen
 - ⑨ Field Lighting, Typ. (3) 60' Light Post (3) 70' Light Post (6) 80' Light Post
 - ⑩ Existing Cypress Trees to Remain
 - ⑪ New Spectator Bleachers
 - ⑫ (2) Volleyball
 - ⑬ Protective Fencing
 - ⑭ Pathway
 - ⑮ Practice Soccer

SOURCE: Verde Design

Case No. 2011.0148E: Minnie and Lovie Ward Athletic Fields

Figure 3
Proposed Site Plan

**TABLE 2
PROJECT CHARACTERISTICS**

	Existing Facility	Proposed Project
Physical Components		
Athletic Fields Area	Approximately 267,000 square feet (6.1 acres)	Approximately 267,000 square feet (6.1 acres)
Athletic Fields Type	One varsity baseball field; One softball/little league field; One soccer/ground sports field	One varsity baseball field; One softball/little league field Two volleyball courts ^a Multi-field layout configuration for: Two adult soccer fields; Four youth soccer fields; Two women's lacrosse fields; Two men's lacrosse fields; One football practice field; One rugby practice field;
Lawn Type	Turf grass	Synthetic turf with new storm drainage infrastructure
Lighting	None	Three 60-foot-tall field lights; Three 70-foot-tall field lights; Six 80-foot-tall field lights
Spectator Seating	Bleacher seating with approximately 150 seats (baseball field)	Replace existing bleachers and install additional bleachers at softball field; each bleacher would have approximately 100 seats, for a total of 200 seats
Fencing	10- to 20-foot-tall metal chain link fence	16-foot-tall (average height) black vinyl fencing
Other Proposed Changes		Replace baseball and softball backstops and baseball dugout areas; Refurbish the pedestrian walkways around fields; Install new drinking fountains, benches, bike racks, trash, and recycling cans; Modify the existing retaining wall in north-east field corner to help retain hillside soil and manage drainage from the hillside; Upgrade the irrigation and planting at primary entries and along the southern hillside; Install an underground perimeter quick coupler water supply line for park maintenance; Remove cargo container at the western park entrance; Improve infrastructure to comply with ADA requirements; Remove up to 21 trees
General Hours of Operation	Official opening: 6:00 a.m. Reservation hours: Winter: 9:00 a.m. to 5:00 p.m. Fall & Spring: 9:00 a.m. to 7:00 p.m. Summer: 9:00 a.m. to 8:00 p.m. Closed during rain events and at sunset	Official opening: 6:00 a.m. Reservation hours: 9:00 a.m. to 10:00 p.m. Open during rain events and after sunset
Maximum Annual Play	1,796 hours of ground sports play, or 3,580 hours of baseball/softball play	7,162 hours of ground sports play, or 7,150 hours of baseball/softball play

^a Volleyball courts are located in the outfield of the softball/little league field; therefore, simultaneous play could not occur.

SOURCE: SFRPD

consist of drainage tile or an aggregate rock base. At the end of its lifespan, which is anticipated to be a minimum of ten years, the turf would be returned to a turf manufacturer for reuse/recycling and replaced by new synthetic turf.

An underdrain system would be installed underneath the synthetic turf field and would be connected to CCSF's combined storm drain system with likely connection points beneath Lobos Street. Specific connection points have not yet been determined and may require excavation to tie-in the proposed underdrain system with the City's storm drainage infrastructure. Rainwater that falls on the pervious turf field surface would infiltrate into the underdrain system, and then would be conveyed to the combined sewer system for treatment at the Southeast Water Pollution Control Plant.

SFRPD is currently coordinating with San Francisco Public Utilities Commission (SFPUC) staff to ensure that the proposed site drainage system complies with appropriate CCSF, State, and federal regulations. Consistent with the testing program underway at existing synthetic turf fields, SFRPD would conduct water sampling from the underdrain system during the project operations, in conjunction with SFPUC, and evaluate the quality of water drained from the synthetic turf. SFPUC would provide guidance on the number of sampling events required and the sampling parameters. If water quality is found to be acceptable by SFPUC, they could allow drainage from the synthetic field to infiltrate into the groundwater basin.

Lighting and Fencing

The proposed project also includes installation of new lighting at the facility. Field lighting would consist of three 60-foot-tall light standards, three 70-foot-tall standards, and six 80-foot-tall standards, all composed of galvanized steel. There would be three light standards on the north side of the field, five on the south side, and two on both the east and west sides. Each light fixture, or assembly, would include between three and fifteen 1,500-watt metal halide lamps. The assemblies would contain metal shields and would be directed to minimize spillover lighting beyond the project site boundaries. The multi-use area would be illuminated to 30 foot candles and the baseball infields would be illuminated to 50 foot candles. All lighting would be controlled by an online automated control system, which would turn lights on at sunset and turn all the lights off upon field closure at 10:00 p.m. daily. Staff would also be able to manage and manually override the automatic control system from remote locations.

The existing 10- to 20-foot-tall metal chain link fence would be removed and replaced with black vinyl chain link fencing with an average height of 16 feet, on the south, east, and west sides of the field. Access to the playfields through the fence would be similar to the current access points. Gates would be installed at each of the baseball infield locations and another at the midpoint along Lobos Street.

Field Circulation and Viewing

The proposed project would refurbish the pedestrian pathway that surrounds the field. The project would also replace existing bleachers behind the varsity baseball field and install additional bleachers at the softball/little league baseball field. Each bleacher would seat approximately 100 people. All facilities would meet ADA accessibility guidelines.

Additional Amenities

Additional amenities proposed for the park include new drinking fountains, benches, bike racks, and trash/recycling cans. There are currently six to eight bike racks at the recreation center above the playfields, and the project would install two to four new bike racks behind the backstop areas of the baseball fields. The irrigation system and landscaping at the primary entries to the park and along the upper southern hillside along Lobos Street would be upgraded. The existing retaining wall in the northeast corner of the field would be modified to help retain the soil on the hillside above and improve drainage from the hillside. An underground water supply line would be installed for park maintenance on the perimeter of the field and the cargo container located near the western entrance to the park would be removed as would the three picnic tables. Amplified sound is currently not allowed at the project site and would not be part of the proposed project.

Vegetation

The project site includes approximately 59 trees representing 9 species.³ The proposed project includes removal of 21 trees and replacement of each tree removed at a one-to-one or greater ratio. Although tree removal is being proposed concurrently with the athletic field renovation, the field renovation itself would not necessitate tree removal to accommodate the project.

³ HortScience, Inc., *Tree Assessment, Minnie and Lovie Ward Recreation Center*, prepared for the San Francisco Recreation and Park Department, January 2011. This document is available for review at 1650 Mission Street, Suite 400, San Francisco, CA in File No. 2011.0148E.

Construction Scheduling and Staging

Project construction would require approximately eight months, as summarized in **Table 3**, and is anticipated to begin in fall 2012. Construction activities would include use of standard earth-moving equipment for grading, large trucks for hauling, and a small crane to lift the proposed light standards. The project would require excavation to a depth of approximately 1 foot below the existing ground surface (bgs) over the field area and approximately 10 feet bgs for the installation of the light standards (an area approximately 30 to 36 inches in diameter per light standard). The total amount of excavation would be approximately 267,840 cubic feet. Construction material staging and storage are anticipated to occur within the boundaries of the existing facility.

The fields would be closed to the public during project construction. It is expected that other fields within the SFRPD system would accommodate field use currently occurring at the project site.

**TABLE 3
ANTICIPATED CONSTRUCTION ACTIVITIES SCHEDULE**

Construction Activity	Required Equipment	Schedule
Site mobilization Install construction fencing Delivery of construction trailer Initiate demolition	Delivery/haul trucks	Month 1
Tree trimming and removal Demolition Install drainage Utility trenching	Basket truck and wood chipper Backhoe Delivery/haul trucks	Month 2
Clear and grub turf and field Site grading	Earth moving equipment Graders/scrapers Delivery/haul trucks	Month 3
Install concrete curbs, walkways, fence/light pole footings Fine site grading	Concrete trucks Fork lift Earth moving equipment	Month 4
Install fencing Install rock base course	Fork lift and basket truck Delivery/haul trucks Earth moving equipment	Month 5
Install light poles Miscellaneous clean-up work	Delivery/haul trucks Crane	Month 6
Install playfield turf base Deliver infill and artificial turf	Delivery/haul trucks Fork lift	Month 7
Install artificial turf Site cleanup	Fork lift	Month 8
Replace removed trees	Delivery/haul trucks	Could occur in conjunction with other activities above

SOURCE: SFRPD

Operations and Maintenance

Following completion of project construction, the athletic field would be available for year-round use and evening play hours would be extended until 10:00 p.m. The field would be available for use as two full-size soccer fields or a full-size soccer field and a baseball field. As described above, all lighting would be controlled by an online automated control system, which would turn lights on at sunset and turn all the lights off upon field closure at 10:00 p.m. daily.

Field reservations would continue to operate as under existing conditions. **Table 4** summarizes the maximum possible use schedule for the fields during spring based on SFRPD projections of expected use patterns (as observed at other similar facilities) and the available field resources, following project implementation, which would likely continue to be the highest-use period for the facility.

The synthetic turf fields would be available for open play whenever the fields are not in use by groups with field reservations. Standard SFRPD signage would be posted, indicating open play availability and clarifying that permit holders have priority on the fields. As with all SFRPD athletic fields, signage would clarify that the following uses are prohibited on all SFRPD athletic fields: smoking, barbeques, alcohol, bikes, and dogs. In addition, no food or metal cleats would be allowed on the synthetic turf.

It is expected that staffing at the project site would not increase and that one FTE maintenance staff would continue to maintain the facility. Maintenance would consist of garbage pick-up and periodic sweeping and grooming of the synthetic turf. Spot cleaning of spilled liquids on the synthetic turf would be conducted as needed using only soap and water.

No detergents, disinfectants or special cleaners are used on any San Francisco synthetic turf fields and would not be used at this site. Although small amounts of solvents and adhesives could be required to make minor repairs, they would not be used in large quantities but only in spot applications at the specific repair location. SFRPD would establish a site-specific maintenance schedule, with activities and timing similar to that of other synthetic turf fields. For example, the South Sunset Playground maintenance schedule includes sweeping every two weeks, or as needed, and turf grooming every five to eight weeks. Repair of turf, removal of graffiti, and spot washing with soap and water is conducted as needed. As described above, at the end of the lifespan of the synthetic turf, which is anticipated to be a minimum of 10 years, the turf would be returned to a turf manufacturer for reuse/recycling and replaced by new synthetic turf.

**TABLE 4
ESTIMATED FUTURE WEEKLY SCHEDULE DURING HIGH-USE PERIOD (SPRING)**

Day	Time	Field Use	Expected Use Type	Players and Referees/Field	Spectators /Field	Total # of People
<i>Monday</i>	9:00 a.m. – 3:00 p.m.	2	Open Play	Up to 10 (2 hours each)	0	Up to 60
	3:30 p.m. – 5:00 p.m.	2	Youth Baseball Practice	12 – 18 (1 practice period)	5	Up to 46
	5:00 p.m. – 6:30 p.m.	2	Ground Sports	40 – 54 (1 practice or game period)	5	Up to 118
	6:30 p.m. – 10:00 p.m.	2	Adult Soccer	20 – 40 (3 practices or games)	5	Up to 135
<i>Tuesday</i>	9:00 a.m. – 3:00 p.m.	2	Open Play	Up to 10 (2 hours each)	0	Up to 60
	3:30 p.m. – 5:00 p.m.	2	Youth Baseball Practice	12 – 18 (1 practice period)	5	Up to 46
	5:00 p.m. – 6:30 p.m.	2	Ground Sports	40 – 54 (1 practice or game period)	5	Up to 118
	6:30 p.m. – 10:00 p.m.	2	Adult Soccer	20 – 40 (3 practices or games)	5	Up to 135
<i>Wednesday</i>	9:00 a.m. – 3:00 p.m.	2	Open Play	Up to 10 (2 hours each)	0	Up to 60
	3:30 p.m. – 5:00 p.m.	2	Baseball Game	24 – 36 (1 game)	24 – 36	Up to 72
	5:00 p.m. – 6:30 p.m.	2	Ground Sports	40 – 54 (1 practice or game period)	5	Up to 118
	6:30 p.m. – 10:00 p.m.	2	Adult Soccer	20 – 40 (3 practices or games)	5	Up to 135
<i>Thursday</i>	9:00 a.m. – 3:00 p.m.	2	Open Play	Up to 10 (2 hours each)	0	Up to 60
	3:30 p.m. – 5:00 p.m.	2	Baseball Game	24 – 36 (1 game)	24 – 36	Up to 72
	5:00 p.m. – 6:30 p.m.	2	Ground Sports	40 – 54 (1 practice or game period)	5	Up to 118
	6:30 p.m. – 10:00 p.m.	2	Adult Soccer	20 – 40 (3 practices or games)	5	Up to 135
<i>Friday</i>	9:00 a.m. – 3:00 p.m.	2	Open Play	Up to 10 (2 hours each)	0	Up to 60
	3:30 p.m. – 5:00 p.m.	2	Youth Baseball Practice	12 – 18 (1 practice period)	5	Up to 42
	5:00 p.m. – 6:30 p.m.	2	Ground Sports	40 – 54 (1 practice or game period)	5	Up to 118
	6:30 p.m. – 10:00 p.m.	2	Open Play	Up to 20 (2 hours each)	0	Up to 40
<i>Saturday</i>	8:00 a.m. – 6:30 p.m.	2	Youth Soccer Games	32 – 36 for regulation games; 36 – 44 for small-sided games ^a	32 – 36 for regulation games; 36 – 44 for small-sided games	Up to 88 per game
	6:30 p.m. – 10:00 p.m.	2	Adult Ground Sports	32 – 40 (1 game)	5	Up to 90

^a Small-sided games allow for two games to be played on a single field at the same time, but with a smaller than regulation team size

SOURCE: SFRPD, 2011

B. PROJECT SETTING

The project site is located in the Ocean View neighborhood at 650 Capitol Avenue. The site is bounded by Lobos Street to the south; Plymouth Avenue to the east; and Capitol Avenue to the west. The recreation center buildings and Montana Street border the fields on the north.

The park is divided by several retaining walls to manage the grade change (north to south) of approximately 20 feet, and the parcel is terraced into two levels. The upper level (north level) includes a recreation center, gymnasium, teen building, tennis and basketball courts, play structures, hillside slide, picnic and barbecue areas, and pedestrian paths. The athletic fields are located on the southern (lower) portion of the 10-acre property and cover approximately 6.1 acres. The athletic fields are composed of grass turf in a rectangular layout with a varsity baseball field located in the southeast corner and a softball/little league size baseball field in the southwest corner. Soccer and other ground sports are played between these two areas. The athletic fields are surrounded by established landscaping trees and other plantings. Just south of the fields is a sloped landscape area which has an approximate 10-foot grade change between the field and the perimeter sidewalk on Lobos Street.

The project is located in a P (Public) Use District and a 40-X (40-foot height limit; no bulk limit) Height and Bulk District. The park is located in a residential neighborhood with single-family homes on all four streets bordering the site. All of the surrounding residential areas are zoned Residential, Single Family (RH-1), with a small area of RH-2 (Residential, Two Family) at the intersection of Lobos Street and Plymouth Avenue. Sheridan Elementary School is located directly southwest of the project site at the southeast corner of Capitol Avenue and Lobos Street, and is located in a P Use District. All of the surrounding properties are located in a 40-X Height and Bulk District. The site is located along Muni route 54, which runs along Plymouth Avenue, and the M line, which runs along Broad Street, two blocks south of the park. Bike routes in the vicinity of the project site are located along Sagamore Street (#98), Ocean Avenue (#84 and a portion of #90), and Brotherhood Way (#98).

C. COMPATIBILITY WITH ZONING, PLANS, AND POLICIES

	<i>Applicable</i>	<i>Not Applicable</i>
Discuss any variances, special authorizations, or changes proposed to the <i>Planning Code</i> or Zoning Map, if applicable.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Discuss any conflicts with any adopted plans and goals of the City or Region, if applicable.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Discuss any approvals and/or permits from City departments other than the Planning Department or the Department of Building Inspection, or from Regional, State, or Federal Agencies.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

SAN FRANCISCO PLANNING CODE

The *San Francisco Planning Code (Planning Code)*, which incorporates the City's Zoning Maps, governs permitted uses, densities, and configuration of buildings within San Francisco. Permits to construct new buildings (or to alter or demolish existing ones) may not be issued unless (1) the proposed project conforms to the *Planning Code*, (2) allowable exceptions are granted pursuant to provisions of the *Planning Code*, or (3) amendments to the *Planning Code* are included as part of the proposed project.

The project site is located in a P (Public) Use District and a 40-X (40-foot height limit; no bulk limit) Height and Bulk District. The P District applies to land that is owned by a governmental agency and is in some form of public use, including open space. The proposed project would replace the existing grass athletic field with synthetic turf and install 12 light standards. New bleachers would be installed to replace existing ones at the varsity baseball field and additional bleachers would be installed at the softball/little league field. No buildings or other structures would be constructed as part of the project. The use of the project site would remain consistent with requirements.

PLANS AND POLICIES

San Francisco Plans and Policies

The San Francisco *General Plan* provides general policies and objectives to guide land use decisions. The *General Plan* contains 10 elements (Commerce and Industry, Recreation and Open Space, Housing, Community Facilities, Urban Design, Environmental Protection, Transportation,

Air Quality, Community Safety, and Arts) that set forth goals, policies and objectives for the physical development of the City.

The General Plan includes a Recreation and Open Space Element (ROSE), which frames the City's policies regarding parks, recreation facilities, and open space. The ROSE was adopted in 1986, an update was completed in 2009, and a revised draft was released in June 2011.⁴ The ROSE is currently undergoing environmental review. The ROSE addresses use of existing facilities and identifies parameters for planning and development of additional facilities as opportunities arise. Policies 2.2, 4.1, 4.3 of the current ROSE focus on the preservation, renovation, and expansion of recreational uses at existing parks and recreation facilities. Proposed improvements at the Minnie and Lovie Ward Playfields would be consistent with these policies by providing additional amenities at an existing park and allowing for increased usage of the athletic fields by the public. The proposed project does not obviously or substantially conflict with any policies in either the ROSE or the 2009 draft ROSE Update. General Plan Referral for the proposed project would also be required.

Proposition M—The Accountable Planning Initiative

In November 1986, the voters of San Francisco approved Proposition M, the Accountable Planning Initiative, which added Section 101.1 to the City *Planning Code* to establish eight Priority Policies. These policies, and the sections of this Environmental Evaluation addressing the environmental issues associated with the policies, are: (1) preservation and enhancement of neighborhood-serving retail uses; (2) protection of neighborhood character (Question 1c, Land Use); (3) preservation and enhancement of affordable housing (Question 3b, Population and Housing, with regard to housing supply and displacement issues); (4) discouragement of commuter automobiles (Questions 5a, b, f, and g, Transportation and Circulation); (5) protection of industrial and service land uses from commercial office development and enhancement of resident employment and business ownership (Question 1c, Land Use); (6) maximization of earthquake preparedness (Questions 13 a-d, Geology, Soils, and Seismicity); (7) landmark and historic building preservation (Question 4a, Cultural Resources); and (8) protection of open space (Questions 8 a and b, Wind and Shadow, and Questions 9a and c, Recreation).

⁴ City and County of San Francisco, *General Plan, Recreation and Open Space Element, Revised Draft*, June 2011.

Prior to issuing a permit for any project that requires an Initial Study under the California Environmental Quality Act (CEQA), and prior to issuing a permit for any demolition, conversion, or change of use, and prior to taking any action that requires a finding of consistency with the *General Plan*, the City is required to find that the proposed project or legislation would be consistent with the Priority Policies.

The consistency of the proposed project with the environmental topics associated with the Priority Policies is discussed in the Evaluation of Environmental Effects, providing information for use in the approvals for the proposed project. The case report and approval motions for the proposed project would contain the Department's comprehensive project analysis and findings regarding consistency of the proposed project with the Priority Policies.

The renovation of the Minnie and Lovie Ward Playfields with synthetic turf and lighting does not appear to conflict with any adopted plans and goals of the City for the purposes of the California Environmental Quality Act (CEQA). The proposed project would require a General Plan Referral which would analyze the project's consistency with the General Plan. The compatibility of the proposed project with *General Plan* objectives and policies that do not relate to physical environmental issues will be considered by decision makers as part of their decision whether to approve or disapprove the proposed project. Any potential conflicts identified as part of the process would not alter the physical environmental effects of the project.

Regional Plans and Policies

The five principal regional planning agencies and their over-arching policy-plans to guide planning in the nine-county bay area include the Association for Bay Area Governments' (ABAG) *Projections 2009*, the Bay Area Air Quality Management District's (BAAQMD's) *2010 Clean Air Plan*, the Metropolitan Transportation Commission's *Regional Transportation Plan – Transportation 2035*, the San Francisco Regional Water Quality Control Board's *San Francisco Basin Plan*, and the San Francisco Bay Conservation and Development Commission's *San Francisco Bay Plan*. Due to the location, size, and nature of the proposed project, there would be no anticipated conflicts with regional plans.

PROJECT APPROVALS

The project, as proposed, would require the following approvals:

Planning Commission

- Determination of consistency with the *San Francisco General Plan*, and any appeals of the Initial Study/Preliminary Mitigated Negative Declaration.

Recreation and Park Commission

- Approval of the Minnie and Lovie Ward Playfields Renovation Project Conceptual Plan.

Board of Supervisors, if required

- Consideration of any appeals of the Planning Commission's adoption of the IS/MND.

Department of Building Inspection

- Electrical Permit

SFPUC NPDES Permit

- Compliance with NPDES stormwater permit for discharges to the combined sewer system.

D. SUMMARY OF ENVIRONMENTAL EFFECTS

The proposed project could potentially affect the environmental factor(s) checked below. The following pages present a more detailed checklist and discussion of each environmental factor.

- | | | |
|---|--|---|
| <input type="checkbox"/> Land Use | <input type="checkbox"/> Air Quality | <input checked="" type="checkbox"/> Biological Resources |
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Geology and Soils |
| <input type="checkbox"/> Population and Housing | <input type="checkbox"/> Wind and Shadow | <input type="checkbox"/> Hydrology and Water Quality |
| <input type="checkbox"/> Cultural and Paleo. Resources | <input type="checkbox"/> Recreation | <input type="checkbox"/> Hazards/Hazardous Materials |
| <input type="checkbox"/> Transportation and Circulation | <input type="checkbox"/> Utilities and Service Systems | <input type="checkbox"/> Mineral/Energy Resources |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Public Services | <input type="checkbox"/> Agricultural and Forest Resources |
| | | <input type="checkbox"/> Mandatory Findings of Significance |

This Initial Study examines the proposed project to identify potential effects on the environment. For each item on the Initial Study checklist, the evaluation has considered the impacts of the proposed project both individually and cumulatively. All items on the Initial Study Checklist that have been checked “Less than Significant Impact with Mitigation Incorporated,” “Less than Significant Impact,” “No Impact” or “Not Applicable,” indicate that, upon evaluation, staff has determined that the proposed project could not have a significant adverse environmental effect relating to that issue. A discussion is included for those issues checked “Less than Significant Impact with Mitigation Incorporated” and “Less than Significant Impact” and for most items checked with “No Impact” or “Not Applicable.” For all of the items checked “No Impact” or “Not Applicable” without discussion, the conclusions regarding potential significant adverse environmental effects are based upon field observation, staff experience and expertise on similar projects, and/or standard reference material available within the Department, such as the Department’s *Transportation Impact Analysis Guidelines for Environmental Review*, or the California Natural Diversity Data Base and maps, published by the California Department of Fish and Game. For each checklist item, the evaluation has considered the impacts of the project both individually and cumulatively. The items checked above have been determined to be “Less than Significant with Mitigation Incorporated.”

E. EVALUATION OF ENVIRONMENTAL EFFECTS

<i>Topics:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
1. LAND USE AND LAND USE PLANNING – Would the project:					
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial impact upon the existing character of the vicinity?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Impact LU-1: The proposed project would not physically divide an established community. (Less than Significant)

The project proposes the renovation of the existing Minnie and Lovie Ward Playfields with new synthetic turf and the installation of twelve light standards to allow for evening use. The project site is bordered by single-family residences on three sides (south, east, and west) and the existing Minnie and Lovie Ward Recreation Center on the north. The project would continue the existing athletic use of the site, with an increase in available recreational use hours. The surrounding land uses would be expected to continue operating without disruption from the project. The project would not disrupt or divide the physical arrangement of the surrounding neighborhood or impede the passage of persons or vehicles. Therefore, the project would not physically divide an established community and the impact would be less than significant.

Impact LU-2: The proposed project would not be inconsistent with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. (Less than Significant)

The proposed project would not conflict with applicable plans, policies, and regulations such that an adverse physical change would result (see Section C., Compatibility with Zoning, Plans, and Policies). Environmental plans and policies, such as the *Bay Area Clean Air Plan*, directly address

environmental issues and/or contain targets or standards that must be met in order to preserve or improve characteristics of the City's physical environment. The proposed project would not obviously or substantially conflict with any such adopted environmental plan or policy and the impact would be less than significant.

Impact LU-3: The proposed project would not have a substantial impact upon the existing character of the vicinity. (Less than Significant)

The project site currently consists of a grass turf athletic field. The proposed project would change the appearance of the site through the replacement of the grass turf with synthetic turf and the installation of light standards, and the amount of use of the site is expected to increase. However, the existing use of the project site as an athletic field would remain the same upon construction of the proposed project. Use of the park as proposed would be consistent with the existing character of the park and its vicinity. It would not substantially alter other public uses and enjoyment of the park. Therefore, the project would not have a substantial impact regarding the existing character of the project's vicinity.

Impact LU-4: The proposed project, in combination with past, present and reasonably foreseeable future projects in the vicinity of the site, would result in less-than-significant cumulative impacts to land use. (Less than Significant)

Cumulative projects in the vicinity of the proposed project consist of limited residential renovation projects. There are no major projects within 1,000 feet of the project site. The project would not result in any significant cumulative land use or planning impacts since it would not divide an established community or cause a substantial adverse change in land use character in the project vicinity, and thus could not contribute to any overall cumulatively considerable change in land use character. The proposed project would not conflict with any applicable environmental plans. Therefore, the proposed project's impacts related to land use, both individually and cumulatively, are considered less than significant.

<u>Topics:</u>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
2. AESTHETICS —Would the project:					
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and other features of the built or natural environment which contribute to a scenic public setting?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area or which would substantially impact other people or properties?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Impact AE-1: The proposed project would not have a substantial adverse effect on a scenic vista. (Less than Significant)

Scenic vistas, roadways, and corridors are established for the purpose of protecting or preserving an aesthetic resource and are typically documented in general plans and resource management plans. The Urban Design Element of the San Francisco *General Plan* classifies streets in relation to the quality of street views that are available from vantage points along those streets. Ashton Avenue (located approximately 1,400 feet northwest of the park), and several streets parallel to Ashton on the west, are rated as “Excellent” for street views. However, views at these locations are directed northwards and the project site is not visible from these streets. Some segments of Capitol Avenue, Plymouth Avenue, and Minerva Street that border the park are designated as having “Good” and/or “Average” views.⁵ The *General Plan* also designates “Street Areas Important to Urban Design and Views.” All of the streets that border or intersect the park (Capitol Avenue, Plymouth Avenue, Lobos Street, Montana Street, and Minerva Street) are designated as “Streets That Extend the Effect of Public Open Space.”⁶

Portions of the site can be viewed from public streets in the vicinity of the project. The project site is partially obscured from all sides by existing vegetation, the recreation center, and the

⁵ City and County of San Francisco, *General Plan, Urban Design Element*, adopted 1990, amended 2010.

⁶ *Ibid.*

topography of the area. No buildings or other large structures that could block scenic views are proposed by the project. Given the dense urban setting of the proposed project, its continued use as an athletic facility, and the limited introduction of project elements into views of the site, the project would not result in a substantial adverse effect on a scenic vista. The impact would be less than significant.

Implementation of the proposed project would modestly interrupt or alter some existing private views currently available to nearby residences in the vicinity of the park. The residences immediately across from the park on Lobos Street, Montana Street, Capitol Avenue, and Plymouth Avenue would be most affected by the proposed changes. The most noticeable project components would be the new light standards and night lighting that would be used to illuminate the playfields in the evening. Changes to private views would differ based on proximity to the project site, quality of the view currently experienced, and relative sensitivity of the viewer. Views of the new light standards by residents on Lobos Street, Capitol Avenue, and Plymouth Avenue would also be partially obscured by existing trees and other vegetation. Nevertheless, such views could be perceived as undesirable consequences for affected residents who are used to the existing visual conditions. However, CEQA does not consider impacts to private views to be significant. Thus, the proposed project's impact on private views would not be considered a potentially significant environmental impact.

Impact AE-2: The proposed project would not substantially damage any scenic resources. (Less than Significant)

Scenic resources are the visible physical features on a landscape (e.g. land, water, vegetation, animals, structures, or other features). The project would include the removal of up to 21 trees and shrubs. The majority of the trees that would be removed are located near the western entrance to the park at Minerva Street and at the northeast corner of the field, near the tennis courts. The project would replace each tree removed at a one-to-one or greater ratio with specific tree replacement locations to be determined by SFRPD Urban Forestry. The overall effect on the landscaping surrounding the playfields would be similar to existing conditions. Therefore, the proposed project is not expected to substantially damage any scenic resources on the project site and the impact would be less than significant.

Impact AE-3: The proposed project would result in a change to the existing character of the project site, but this change would not degrade the visual character or quality of the site and its surroundings. (Less than Significant)

The proposed project would alter the visual character of the project site. The major design features that would be altered that may affect the character of the project site include: (1) replacement of grass turf fields with synthetic turf; (2) installation of field lighting and replacement fencing; (3) replacement of player benches and bleachers, and (4) removal of selected trees and shrubs. No buildings or other large structures are proposed by the project.

Construction material staging and storage are anticipated to occur entirely within the boundaries of the existing park, which would be closed to the public during the approximately eight-month construction period. Thus, changes in the visual character of the park during construction would be mostly limited to short-range views from areas immediately surrounding the project site and would be temporary.

Computer modeling and rendering techniques were employed to produce visual simulations illustrating potential views of the project site at completion. Site reconnaissance was conducted to view the site and surrounding area in order to identify potential viewpoints. Representative photographs were taken to document existing conditions using a single lens reflex (SLR) digital camera. Computer modeling and rendering techniques were then used to produce the simulation images. Using engineering surveys, digital 3D models of existing features were created to align the digital camera with the photograph. Trees proposed for removal were similarly removed from the image and project elements were added. The visual simulations are presented with two images per page: the upper image is a photographic view showing the existing visual condition, and the lower image is a visual simulation depicting the proposed project.

The simulations illustrate the appearance of the proposed changes from two daytime observation points. **Figure 4** shows existing and proposed conditions looking west from a viewpoint just south of the intersection of Plymouth Avenue and Minerva Street. **Figure 5** shows the view looking southeast from the intersection of Capitol Avenue and Montana Street.

As shown in the lower image of Figure 4, the light standards would add a new vertical element to the project site. Although several standards are visible from this viewpoint, as well as from other areas adjacent to the park, the poles are slender and the ones adjacent to the varsity baseball field



Existing View



Proposed View

SOURCE: Square One Productions

Case No. 2011.0148E: Minnie and Lovie Ward Athletic Fields

Figure 4
Existing and Proposed Views
(Plymouth Avenue and Minerva Street)



Existing View



Proposed View

SOURCE: Square One Productions

Case No. 2011.0148E: Minnie and Lovie Ward Athletic Fields

Figure 5
Existing and Proposed Views
(Capitol Avenue and Montana Street)

are similar in height to the surrounding trees, thus they do not extend above the tree line. The standards adjacent to the varsity baseball field would also be partially obscured from viewpoints outside the park along Lobos Street and Capitol Avenue.

The synthetic turf would appear different from the existing natural grass because it would be uniform in color, texture, and coverage as compared with the existing grass. The synthetic turf would be green (a similar shade as the existing natural turf) and would approximate the look of natural grass to the extent feasible. Some observers may perceive artificial turf as inherently unattractive or visually jarring, while others may view it as a normal feature of athletic fields and thus not contributing to any adverse visual change.

New fencing would also be visible from this viewpoint. Although it would be more prominent in the foreground as compared to existing conditions, it would replace the dilapidated and rusty fence visible in the upper image. The cargo container at the far end of the field as seen in the existing image would be removed as part of the project and is therefore not shown in the simulation. The removal of six trees at the northwest corner of the field is represented in the lower image.

The simulated view of the project site shown in Figure 5 also includes the proposed light standards, synthetic turf, and replacement fencing. The light standards are the most apparent change in the character of the field. Similar to views shown in Figure 4, the standards adjacent to the varsity baseball field are not as prominent because they partially blend in with the surrounding vegetation, and they are similar in height to the existing tree line. The synthetic turf and fencing are visible, but they are not as noticeable from this viewpoint. In addition, the cargo container located at the entrance to the park near Minerva Street would be removed and is not shown in the lower image.

Although the most prominent project elements (light standards, synthetic turf, and fencing) would alter the visual character of the site, these features would be consistent with the primary purpose of the park as a recreational facility and would not substantially diminish the visual quality of the park. The new light standards and the replacement fencing would be the most evident change in views from surrounding streets. The twelve light poles would be installed in locations on the perimeter of the playfields in order to light the field most effectively. They would not be grouped such that the poles would be placed in proximity to one another. Therefore, the proposed light standards would not block views to or through the park from nearby streets. New vinyl chain link fencing would replace similar chain link fencing on the southern, eastern, and western boundaries of the field, and would likewise not block views.

The number of trees and shrubs proposed for removal (21) is substantial in comparison to those retained (38). The project would replace each tree at a one-to-one or greater ratio, but specific replacement locations have not been determined. The tree line bordering the site would not appear substantially different compared to existing conditions as most of the trees along the perimeter of the project site would be retained. Therefore, the proposed project would not result in substantial adverse impacts to the visual character or quality of the site and the impact would be less than significant.

Impact AE-4: The proposed project would create a new source of light and glare, but not to an extent that would adversely affect day or nighttime views in the area or which would substantially impact other people or properties. (Less than Significant)

Existing sources of nighttime light in the area surrounding the park include street lights on adjacent streets as well as existing light standards on the tennis and basketball courts in the northeast corner of the park. Other sources of light include vehicles traveling along roadways and light emanating from nearby residences and other buildings.

The proposed project includes installation of new lighting at the park. Field lighting would consist of three 60-foot-tall light standards, three 70-foot-tall standards, and six 80-foot-tall standards, all composed of galvanized steel. Three light standards would be installed on the north side of the field, five on the south side, and two each on the east and west sides. Each light fixture, or assembly, would include three to fifteen, 1,500-watt metal halide lamps. All lighting would be controlled by an online automated control system, which would turn lights on at sunset and turn all the lights off upon field closure at 10:00 p.m. daily. Staff would also be able to manage and manually override the automatic control system from remote locations.

The proposed light assemblies would contain metal shields and are designed specifically for sports fields. They are designed to focus the light on the field evenly while minimizing the spread of light upward and beyond the project site boundaries. The multi-use area would be illuminated to 30 foot-candles and the baseball infields would be illuminated to 50 foot-candles, according to Musco Lighting.⁷ Light spilling over the project boundary from the light standards would be greatly reduced beyond the playfields. For example, on the softball/little league field, light levels would be

⁷ Musco Lighting, Illumination Summary, October 18, 2010 and January 20, 2011. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2011.0148E.

approximately 13.5 foot candles beneath the light poles. Thirty feet beyond the poles, light levels are only slightly above 2 foot candles.⁸ At the baseball fields on the eastern side of the field, there would be an average 12.2 foot candles at areas just behind the two main infield light standards. The foot candles would diminish farther 30 feet beyond to approximately 1.6 foot candles.⁹

Factors that affect the impact of lighting include the brightness of surrounding lighting, such as residential lights and moonlight, and the “bounce” of the field lights off surrounding structures, the ground, and particles of water in the air (i.e., fog). Thus, the impact of additional artificial lighting on light spillover can depend on such things as the reflectivity and wetness of the synthetic turf, fog conditions, and the phase of the moon. Although lighting proposed by the project would appear brighter compared to existing conditions, the lighting levels for locations off the field are not sufficient to adversely and substantially affect the surrounding neighborhood given that the project site is in an urban neighborhood with existing street lighting and other light sources. In addition, lighting would be directed onto the field surface and not the windows of adjacent properties, and would automatically shut off at 10:00 p.m. Therefore, the effects of nighttime lighting would not substantially impact people or properties in the project vicinity and the impact would be less than significant.

In terms of daytime light and glare effects, the proposed project would not introduce large mirrored or reflective surfaces to the project site. Proposed light standards, seating, and other elements of the project would not be composed of reflective materials. Therefore, the effects of daytime light and glare due to the project would be less than significant.

Impact AE-5: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would have a less-than-significant impact on aesthetics. (Less than Significant)

For the reasons discussed above, the proposed project’s effects related to aesthetics, both individually and cumulatively, are considered less than significant. No other projects are proposed that would substantially affect visual character or visual resources.

⁸ *Ibid.*

⁹ *Ibid.*

<i>Topics:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
3. POPULATION AND HOUSING— Would the project:					
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing housing units or create demand for additional housing, necessitating the construction of replacement housing?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Impact PH-1: The proposed project would not induce substantial population growth in San Francisco, either directly or indirectly. (Less than Significant)

In general, a project would be considered growth inducing if its implementation would result in substantial population increases and/or new development that might not occur if the project were not implemented. While the proposed project would increase use of the Minnie and Lovie Ward Athletic Fields, it is intended to address an existing shortage of fields and would not be expected to enable or encourage other growth. While it is the goal of the project sponsor to increase the use of the existing facility, the project would not directly or indirectly result in a significant increase in population. Project-related effects with respect to population growth would be less than significant.

Impact PH-2: The proposed project would not displace substantial numbers of people or existing housing units or create demand for additional housing, necessitating the construction of replacement housing. (No Impact)

The project does not include development of any new housing or commercial uses, and there would be no residents displaced as a result of the project.

Impact PH-3: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would have a less-than-significant impact on population and housing. (Less than Significant)

As the project proposes the renovation of an athletic facility, there would be no contribution to any cumulative effect on population and housing. It would not contribute to any population and housing impacts associated with any potential development in the vicinity. For the reasons discussed above, the proposed project’s effects related to population and housing, both individually and cumulatively, are considered less than significant.

<i>Topics:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
4. CULTURAL AND PALEONTOLOGICAL RESOURCES— Would the project:					
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5, including those resources listed in Article 10 or Article 11 of the San Francisco <i>Planning Code</i> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Impact CP-1: The proposed project would not cause a substantial adverse change in the significance of a historical resource as defined in §15064.5, including those resources listed in Article 10 or Article 11 of the San Francisco *Planning Code*. (Less than Significant)

The project site currently consists of approximately 6.1 acres of grass turf used for recreation. There are no buildings located on the playfields site. The site has been used as an athletic field since the early 1930s. On February 6, 1931, Proposition 3 - “Improvements in Public Playgrounds,” a \$200,000 bond issue for construction and improvements of playgrounds was passed by voters in San Francisco. This ballot measure included funding for Ocean View playground (the former name of

the project site).^{10,11} Review of SFRPD plans for the park from 1930, 1931, and 1948 as well as historic aerial photographs indicate that the footprint of the playfields and the position of the two baseball fields has remained unchanged to the present day.¹²

CEQA *Guidelines* define a historical resource as 1) a resource listed in or eligible for listing in the California Register of Historical Resources (CRHR); 2) a resource included in a local register of historical resources, as defined in Public Resources Code (PRC) Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or 3) any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

For a historical resource to be eligible for the CRHR, it must be significant at the local, state, and/or federal level. The resource must also retain enough integrity to be recognizable as a historical resource and to convey its significance. Under the CRHR, a resource over 45 years old will be considered to be "historically significant" if the resource meets the criteria listed in Public Resources Code, Section 5024.1, which includes the following:

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

The City of San Francisco maintains a list of locally designated City Landmarks and Historic Districts. Landmarks can be buildings, sites, or landscape features. Districts are defined generally as an area of multiple historic resources that are contextually united. The regulations governing Landmarks, as well as the list of individual Landmarks and descriptions of each Historic District,

¹⁰ Delehanty, Randolph, *San Francisco Parks and Playgrounds, 1839 to 1990: The History of a Public Good in One North American City*, 1992, available at the San Francisco History Center, San Francisco Public Library.

¹¹ San Francisco Ballot Propositions Database, San Francisco Public Library, available online at <http://sfpl.org/index.php?pg=2000027201&propid=1765>.

¹² [Historicaerials.com](http://historicaerials.com), imagery for 650 Capitol Avenue, San Francisco, California, available online at <http://historicaerials.com/>.

are found in Article 10 of the *Planning Code*. The project site is not listed as a Landmark or located within a Historic District under Article 10. Conservation Districts in San Francisco are located exclusively in the City's downtown core area. The regulations governing properties in these districts, and descriptions of each, are found in Article 11 of the *Planning Code*. The project site is not located within the downtown area of San Francisco and is not located within a Conservation District. As discussed above, the use of the project site as a public athletic field began in the early 1930s and has remained basically unchanged since that time, with the exception of tree and shrubbery growth at the southeast and southwest corners of the park.

The park is not listed in the CRHR and does not appear to meet the criteria for eligibility for listing in the CRHR. Research did not reveal that the park is associated with significant historical events, the lives of persons important in the past, or embody the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values. There is no indication that the park has yielded, or may be likely to yield, information important in prehistory or history. The park was one of a number of similar facilities constructed in San Francisco as a result of a bond issue for playground improvements in the 1930s, and it represents a more typical, rather than outstanding, example of municipal park design. While the park is an important recreational facility to persons living in the immediate neighborhood, the park itself has no significant associations with historical events at the national, state, or local (city) level. Although the Recreation Center was renamed in 2005 after local park advocates and fundraisers, Minnie and Lovie Ward, these individuals would not be considered important persons on the national or state levels, nor would their association with the park normally be considered sufficient to warrant listing of the park as a historical resource at the local level. This is because the Wards' association with the park occurred less than 45 years ago and the Recreation Center was named after the Wards in 2005. Moreover, while the Wards were heavily involved in cleaning up the park in the 1980s and 1990s, their association with the Ocean View/Merced Heights/Ingleside neighborhood was both broader and deeper than merely the park that was named for them. For these reasons, the park would not be considered a historical resource as defined in Section 15064.5. The proposed project does not have the potential to cause a substantial adverse change in the significance of a historical resource; therefore, the impact would be less than significant.

Impact CP-2: The proposed project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5. (Less than Significant)

No recorded archaeological sites are located on or near the project site and none are expected to occur in this location. Construction of the proposed project would require excavation to a depth of approximately 1 foot below the existing ground surface (bgs) for most project elements and approximately 10 feet bgs for the installation of the twelve light standards. The Planning Department reviewed the project for impacts to archeological resources and determined that no CEQA-significant archeological resources are expected within project-affected soils.¹³ No mitigation is required.

Impact CP-3: The proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. (No Impact)

The project site does not contain any unique geologic features. As described above, construction of the proposed project is not expected to result in significant ground disturbance. There are no known paleontological resources at the project site, and given the limited depth of excavation, it is unlikely that significant paleontological resources would be found in the material brought to the surface. Therefore, the proposed project would not have a significant effect on paleontological resources or unique geologic features.

Impact CP-4: The proposed project would not disturb human remains, including those interred outside of formal cemeteries. (Less than Significant)

Impacts on Native American burials are considered under Public Resources Code (PRC) Section 15064.5(d)(1). When an Initial Study identifies the existence of, or the probable likelihood of, Native American human remains within the project site, the CEQA lead agency is required to work with the appropriate tribal entity, as identified by the California Native American Heritage Commission (NAHC). The lead agency may develop an agreement with the appropriate tribal entity for testing or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials. By implementing such an agreement, the project becomes exempt from the general prohibition on disinterring, disturbing, or removing human

¹³ Archeological Response for Minnie and Lovie Ward Playfield Renovation, Memorandum from Don Lewis/Randall Dean, Environmental Planning, May 25, 2011. This document is available for public review at the Planning Department, 1650 Mission Street, 4th Floor, as part of Case File No. 2011.0148E.

remains from any location other than the dedicated cemetery (Health and Safety Code Section 7050.5) and the requirements of CEQA pertaining to Native American human remains. The project’s treatment of human remains and of associated or unassociated funerary objects discovered during any soils-disturbing activity would comply with applicable state laws, including immediate notification of the City and County of San Francisco (CCSF) Coroner. If the Coroner were to determine that the remains are Native American, the NAHC would be notified and would appoint a Most Likely Descendant (PRC Section 5097.98). The preliminary archaeological review conducted by the Planning Department did not identify the project site as a site of potential Native American burials. As such the project is not anticipated to disturb any human remains, including Native American burials, and the project would have a less than significant impact on human remains.

Impact CP-5: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would have a less-than-significant impact on cultural resources. (Less than Significant)

The proposed project would not have cumulative effects on cultural resources, and therefore, the project would not contribute to potentially significant cumulative effects related to cultural resources.

<i>Topics:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
5. TRANSPORTATION AND CIRCULATION— Would the project:					
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<i>Topics:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
c) Result in a change in air traffic patterns, including either an increase in traffic levels, obstructions to flight, or a change in location, that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The project site is not within an airport land use plan area, nor is it in the vicinity of a private airstrip. Therefore, topic 5c is not applicable.

Setting

The project site is located within the Ocean View Neighborhood and is bounded by the Montana Street to the north; Lobos Street to the south; Plymouth Avenue to the east; and Capitol Avenue to the west. These are predominantly single-family residential streets. San José Avenue, Brotherhood Way and Junipero Serra Boulevard (southeast and southwest of the project site), and Ocean Avenue (north of the project site), are classified as major arterials, while Sagamore Street (south of the project site) is classified as a secondary arterial. These arterials also are designated in the General Plan as part of the Congestion Management Network and Metropolitan Transportation System. The local residential streets in the project area generally are two-way streets with two travel lanes and on-street parking in each direction. Plymouth Avenue is approximately 36 feet wide; Capitol Avenue is approximately 30 feet wide; Montana Street is approximately 40 feet wide; and Farallones Street is approximately 30 feet wide. The exception is Lobos Street, which is an approximate 28- to 30-foot-wide, one-lane, one-way westbound street east of Plymouth Avenue, and a two-lane, two-way street west of Plymouth Avenue. San José Avenue is classified in the General Plan as a Primary Transit Street and a Neighborhood Pedestrian (Neighborhood Commercial) Street in proximity to the project site. Ocean Avenue is classified as a Primary Transit Street and a Neighborhood Pedestrian (Neighborhood Commercial) Street. Muni bus routes in the project vicinity include the 29 Sunset and 54 Felton bus lines, and the M Ocean View Light Rail, with stops within a reasonable walking distance of

the project site; the 54 Felton has the closest stops, on Plymouth Avenue at Lobos Street. The majority of roadways in proximity to the project site are not City-designated bicycle routes. The nearest bicycle routes within the project area include: Ocean Avenue (#84), Geneva and Holloway Avenues (#90), and Sickles Avenue, Sagamore Street and Brotherhood Way (#98), all of which are configured so that vehicles and bicyclists share the same roadway.

Impact TR-1: The proposed project would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, nor would the project conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures. (Less than Significant)

Policy 10.4 of the Transportation Element of the San Francisco General Plan states that the City will "Consider the transportation system performance measurements in all decisions for projects that affect the transportation system." To determine whether the proposed project would conflict with a transportation- or circulation-related plan, ordinance or policy, this section analyzes the proposed project's effects on intersection operations, transit demand, impacts on pedestrian and bicycle circulation, parking and freight loading, as well as construction impacts. A Transportation Impact Study was prepared for the proposed project.¹⁴ The Transportation Impact Study provides a description of existing transportation, circulation, parking, and alternative modes of transportation characteristics associated with the existing facilities, and provides an evaluation of potential impacts from the proposed project on transportation, circulation, parking, and alternative modes of transportation conditions.

Trip Generation

Project travel demand refers to the new vehicle, transit, and pedestrian traffic generated by the proposed project. Travel demand estimates of peak-hour new person- and vehicle-trips generated by the proposed project were made based on information provided by the SFRPD about existing and projected future use schedules (weekdays and weekend days) for the athletic fields, using an approach consistent with travel demand estimates for athletic fields in the *Beach Chalet Athletic Fields Renovation Project Transportation Impact Study* (September 2011), and the

¹⁴ ESA, Transportation Impact Study, Minnie and Lovie Ward Athletic Field Renovation Project, December 2011. This study is on file and available for public review at the Planning Department, 1650 Mission Street, 4th Floor.

Treasure Island and Yerba Buena Island Redevelopment Plan Draft EIR (July 2010).¹⁵ Peak-hour trip travel demand, including the parking demand, was estimated for the weekday peak hour (within the 4:00 to 6:00 p.m. period) and the weekend (Saturday) peak hour (within the 2:00 to 4:00 p.m. period).¹⁶ Because the land use (athletic fields) is considered a “non-standard generator”, with unique trip generation and travel behavior patterns, the analysis of project travel and parking demand did not follow the approach and methodologies presented in the *SF Guidelines*.

The analysis hours for both weekday and weekend conditions are the hour used for the highest “turnover” of users (i.e., people arrive ahead of the scheduled start of their game, and other people leave after the end of their game). For this analysis, it was assumed that two fields would be used simultaneously at most, but not at all, times.

The proposed project is anticipated to generate about 190 weekday peak-hour person-trips (118 inbound and 72 outbound), and 352 weekend peak-hour person-trips (176 inbound and 176 outbound). Travel to and from the project site is assumed to be predominantly by auto, with some use by San Francisco residents of transit (given the relative proximity of the 54 Felton bus line and M Ocean View streetcar) and walking/bicycles (by people living or attending school in the surrounding neighborhood). Vehicle occupancy would be expected to vary, from single-occupant vehicles to multi-person carpools, but to estimate vehicle trips for this analysis, an average vehicle occupancy of two people per vehicle was assumed. The project would generate about 84 new peak-hour vehicle trips during the weekday peak hour (52 inbound and 32 outbound), 15 new transit trips, and 9 new walk/bike trips. During the weekend peak hour, the project would generate about 154 new vehicle trips (77 inbound and 77 outbound), 28 new transit trips, and 16 new walk/bike trips.

The estimated peak-hour vehicle trips would result in minor changes to the average delay per vehicle at the intersections in the project vicinity (and all intersections would continue to operate satisfactorily [LOS D or better]), and would not be considered a substantial traffic increase relative to the existing capacity of the local street system. Therefore, the proposed project’s impact on existing vehicular traffic is considered less than significant.

¹⁵ SFRPD Permits and Reservation staff provided existing reservations schedule information and observations of existing use, as well as projections of future use, based on existing use patterns at the project facility and other similar facilities, and proposed field capacity.

¹⁶ These two-hour periods were selected for study based on input from SFRPD and City staff about representative peak use and peak traffic periods.

Although no significant traffic impacts would result from the proposed project, the transportation analysis recommended that the SFPRD develop and implement a Transportation Demand Management (TDM) program for its recreation programs, specifically for its athletic field use, which it currently does not have, with the goal of further reducing vehicle trips to and from the project site by encouraging the use of rideshare, transit, bicycle and walking modes of travel.

Improvement Measure IM-TR-1: Transportation Demand Management

San Francisco Recreation and Park Department should formalize a Transportation Demand Management Plan that addresses travel to and from recreational fields, including posting of transit and rideshare information on related permits or websites, fostering the ongoing collection of travel mode data of its users, and developing other methods to encourage carshare, transit, pedestrian and bicycle travel, particularly as related to athletic field activities.

Parking

San Francisco does not consider parking supply as part of the permanent physical environment and therefore, does not consider changes in parking conditions to be environmental impacts as defined by CEQA. The San Francisco Planning Department acknowledges, however, that parking conditions may be of interest to the public and the decision makers. Therefore, this report presents a parking analysis for informational purposes.

As is the case for the trip generation forecasts, the parking demand estimating methods described in the *SF Guidelines* are not directly applicable to the proposed project. Based on estimated vehicle trips, the peak parking demand would be about 84 spaces on weekdays and about 154 spaces on Saturdays. This is likely a conservative estimate because of the assumed overlap, as well as the assumed average vehicle occupancy of two people per vehicle. The proposed project would not provide any onsite (off-street) parking spaces.

On-street parking in the project area consists predominantly of unrestricted spaces (no time limits), and although there is likely some availability of on-street parking spaces, field observations indicated that on-street parking spaces were nearly fully occupied during both weekday p.m. peak period and weekend midday peak period. The parking demand generated by the project would be partially accommodated by on-street parking spaces in the area, but because the available spaces could be hard to find (sprinkled within the multi-block study area), the unmet demand,

assuming no change in travel modes, would exceed immediately adjacent available on-street spaces, and would result in drivers being forced to park farther away from the project site. It should be noted that the inability of the project's on-site parking supply to fully accommodate the estimated demand is not considered to be a significant impact on the environment, and that the City's "Transit First" policy places an emphasis on encouraging alternative modes of transportation. Furthermore, a vehicle trip reduction improvement measure (Improvement Measure IM-TR-1, see Impact TR-1) has been recommended, which would have SFRPD develop a Travel Demand Management program for its recreational programs, particularly as it relates to project's recreational field use, to encourage methods to reduce vehicle trips, which would also serve to potentially reduce future project-related parking demand.

Parking conditions are not static, as parking supply and demand varies from day to day, from day to night, from month to month, etc. Hence, the availability of parking spaces (or lack thereof) is not a permanent physical condition, but changes over time as people change their modes and patterns of travel.

Parking deficits are considered to be social effects, rather than impacts on the physical environment as defined by CEQA. Under CEQA, a project's social impacts need not be treated as significant impacts on the environment. Environmental documents should, however, address the secondary physical impacts that could be triggered by a social impact. (CEQA Guidelines Section 15131a). The social inconvenience of parking deficits, such as having to hunt for scarce parking spaces, is not an environmental impact, but there may be secondary physical environment impacts, such as increased traffic congestion at intersections, air quality impacts, safety impacts, or noise impacts caused by congestion. In the experience of San Francisco transportation planners, however, the absence of a ready supply of parking spaces, combined with available alternatives to auto travel (e.g., transit service, taxis, bicycles or travel by foot) and a relatively dense pattern of urban development, induces many drivers to seek and find alternative parking facilities, shift to other modes of travel, or change their overall travel habits. Any such resulting shifts to transit service in particular would be in keeping with the City's "Transit First" policy. The City's Transit First Policy, established in the City's Charter Article 8A, Section 8A.115, provides that "parking policies for areas well served by public transit shall be designed to encourage travel by public transportation and alternative transportation." As described above, the project area is well-served by transit, pedestrian and bike routes.

The transportation analysis accounts for potential secondary effects, such as cars circling and looking for a parking space in areas of limited parking supply, by assuming that all drivers would attempt to find parking at or near the project site and then seek parking farther away if convenient parking is unavailable. Moreover, the secondary effects of drivers searching for parking is typically offset by a reduction in vehicle trips due to others who are aware of constrained parking conditions in a given area. Hence, any secondary environmental impacts which may result from a shortfall in parking in the vicinity of the proposed project would be minor, and the traffic assignments used in the transportation analysis, as well as in the associated air quality, noise and pedestrian safety analyses, reasonably addresses potential secondary effects.

Loading

There are no on-site loading facilities, and no on-street parking spaces designated for loading (passenger or freight) within the study area, except a white-curb passenger loading zone on Capitol Avenue just south of Lobos Street, which serves as a school bus stop from 7:00 a.m. to 4:00 p.m. on school days. There are no regular deliveries to the current project site.

Service vehicle trips to the project site (e.g., vehicles to maintain the grounds and to make repairs as required) would not be expected to change substantially from current conditions. It is expected that staffing at the project site would not increase. SFRPD would establish a site-specific maintenance schedule, with activities and timing similar to that of other artificial turf fields, and typically occurring in off-peak hours. The proposed project would have a less-than-significant loading impact because existing loading conditions would be unaffected.

Construction Impacts

During the eight-month construction period (beginning approximately fall 2012), temporary and intermittent transportation impacts would result from truck movements to and from the project site. Truck movements during times of peak traffic flow would have greater potential to create conflicts than during non-peak hours because of the greater numbers of vehicles on the streets during the peak hour that would be slowed by trucks. In addition, classes at the Sheridan Elementary School (on Capitol Avenue between Lobos and Farallones streets) end at 1:50 p.m., and construction vehicles on Capitol Avenue during that time could potentially conflict with vehicles (autos and buses) waiting to pick up students. The sponsor would restrict project-related

truck traffic to the hours of 9:00 a.m. to 3:30 p.m., or other hours/conditions (such as no trucks on Capitol Avenue between 1:45 p.m. and 2:15 p.m.) as stipulated by the City, which could avoid such peak-period effects. Construction material staging and storage, and parking for construction workers, are anticipated to occur onsite, within the boundaries of the existing recreational field facility, which would be closed during the entire construction period.

Construction activities associated with the proposed project are not anticipated to result in substantial impacts on the City's transportation network. Impacts related to an applicable transportation system plan or policy would be less than significant, and the project would not conflict with any applicable congestion management program. While the impact is less than significant, it is recommended that the project sponsor and construction contractors meet with the City's Transportation Advisory Staff Committee (TASC) to determine measures to reduce traffic congestion, including effects on the transit system and pedestrian circulation impacts during construction of the proposed project. TASC consists of representatives from City departments, including the Traffic Engineering Division of SFMTA, Police, Public Works, and SFMTA Muni Operations.

While construction-related impacts would be less than significant, improvement measures could be implemented to further reduce these less-than-significant impacts.

Improvement Measure IM-TR-2: Construction Traffic Measures

The following measures would further minimize disruption of the general traffic flow on adjacent streets:

- To the extent possible, truck movements should be limited to the hours between 9:00 a.m. and 3:30 p.m. (or other times, if approved by SFMTA). Additionally, the project should consider limiting truck movements along Capitola Avenue near the Sheridan Elementary School during their peak-period drop-off or pick-up time periods (7:30 to 7:50 a.m. and 1:45 to 2:15 p.m.).
- The Project Sponsor and construction contractor(s) could meet with the Sustainable Streets Division of the SFMTA, the Fire Department, Muni, and the Planning Department to determine feasible measures to reduce traffic congestion, including potential transit disruption, school pickup time conflicts, and pedestrian circulation impacts during construction of the project.
- As an improvement measure to minimize parking demand and vehicle trips associated with construction workers, the construction contractor could include methods to encourage carpooling and transit use to the project site by construction workers in the Construction Management Plan.

- As an improvement measure to minimize construction impacts on users, nearby residences and businesses, the project sponsor could provide regularly-updated information (typically in the form of website, news articles, on-site posting, etc.) regarding project construction and schedule, as well as contact information for specific construction inquiries or concerns.

Impact TR-2: The proposed project would not substantially increase hazards due to a design feature or incompatible uses. (Less than Significant)

The project site exists within a developed block of San Francisco. The proposed project does not include any design features that would substantially increase traffic hazards (e.g., creating a new sharp curve or dangerous intersections), and would not include any incompatible uses. Therefore, there would be no impacts associated with increased traffic hazards for the proposed project.

Impact TR-3: The proposed project would not result in inadequate emergency access. (Less than Significant)

Vehicle access to the interior areas of the project site (athletic fields and Recreation Center) is provided via a curb cut (on Capitol Avenue opposite Minerva Street) and a path that runs between the Recreation Center to the north and the athletic fields to the south. The surrounding street network serving the project area accommodates the movements of emergency vehicles that travel to and through the area. Emergency access would remain unchanged from existing conditions. Therefore, the project would have a less-than-significant impact on emergency vehicle access to the project site or any surrounding sites.

Impact TR-4: The proposed project would not conflict with an adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. (Less than Significant)

Transit Conditions

Given the characteristics of the users of the athletic fields, and of the transit service in the project area, it is estimated that players, officials or spectators would not typically use public transit to

travel to and from the project site.¹⁷ However, the analysis assumed that about ten percent of San Francisco residents traveling to and from the project site would use Muni line(s). During the weekday p.m. peak hour, the proposed project would generate an estimated 15 transit trips; the project would generate about 28 transit trips during the Saturday peak hour. The analysis of the project's transit impacts conservatively assigned all project-generated transit trips to each of the three Muni lines with stops within a reasonable walking distance of the project site (29 Sunset, 54 Felton, and M Ocean View). The addition of the project-generated riders would not substantially increase the capacity utilization of the affected routes, and the local routes would continue to operate below the 85-percent capacity utilization standard (the highest capacity utilization would be the 29 Sunset in the inbound direction, at 72 percent). Even if some players or spectators chose to use regional transit, the contribution would be minimal, and even if a greater proportion of trips to and from the project site were on transit, the effect on capacity utilization would not be substantial.

The new vehicle trips generated by the proposed project could potentially introduce delays to local Muni transit operations, but any such delays would not be substantial because nearby intersections would continue to operate acceptably, and because the length of time between transit vehicles traveling through the affected intersections would minimize the potential for conflicts with automobiles.

Because the project would not generate substantial numbers of transit trips, and project-generated vehicle trips would not substantially affect local or regional transit operations, there would be a less-than-significant project impact to transit conditions.

Bicycle Conditions

The majority of roadways in proximity to the project site are not designated as bicycle routes in the Transportation Element. Based on field observations, bicycle activity in the vicinity of the project site can be characterized as low to moderate, which is likely attributable to the hilly terrain and residential nature of the project area. The project would not be expected to generate a noticeable increase in bicycles in the area (i.e., no more than nine peak-hour bike trips), nor would it be expected to noticeably affect existing bicycle conditions or facilities in the area. While the proposed

¹⁷ Although the 54 Felton has stops on Plymouth Avenue at Lobos Street, it is a Community Service bus route that connects the local neighborhood with the Balboa Park BART/Muni station and the Daly City BART station, and would be of limited use to people who live farther away. In addition, it is an approximate 625-foot walk on a five percent upgrade from the M Ocean View stop at the Broad Street intersections at Plymouth Avenue and Capitol Avenue to the project site.

project is not anticipated to add a substantial number of bicycle trips to the area, the proposed project would include two to four new bicycle racks behind the backstop areas of the baseball fields, in addition to the about six to eight bike racks currently at the recreation center above the field. The project would have a less-than-significant bicycle impact.

Pedestrian Conditions

Pedestrian facilities in the project area include sidewalks and crosswalks at all signalized intersections. Based on field observations, the volume of pedestrians in the project site vicinity is low to moderate (i.e., activity levels typically found in residential settings near schools), and sidewalks are adequate in width to accommodate existing pedestrian circulation. Generally, pedestrian trips associated with the project site would be by people who walk locally to the project site, or between their off-site (on-street) parking spaces or nearby transit stops and the project site. Pedestrian pathways surrounding the athletic fields would be replaced and improved upon, including meeting ADA accessibility requirements. The peak number of pedestrian trips in the immediate vicinity would likely increase under project conditions because the improved condition of the fields under the proposed project, as compared to existing conditions. The proposed project would neither substantially affect current pedestrian flow conditions, nor result in potentially hazardous pedestrian conditions, and therefore, would have a less-than-significant pedestrian impact.

Impact C-TR: The proposed project, in combination of past, present, and reasonably foreseeable future projects would not result in substantial cumulative transportation impacts. (Less than Significant)

The Cumulative 2035 traffic volumes in the project study area are based on expected traffic growth rates between 2010 and 2035 obtained from the San Francisco County Transportation Authority (SFCTA) countywide travel demand forecasting model (SFCTA CHAMP Model). Under 2035 cumulative conditions, all ten study intersections would continue to operate at acceptable levels of service (LOS D or better) during the weekend peak hour, and all except two of the study intersections would continue to operate at an acceptable level of service for the weekday p.m. peak hour. The side-street stop-controlled (Farallones Street) approach to the intersection of San José Avenue / Farallones Street, to which the proposed project would add 13 vehicle trips, would operate at LOS F during the weekday p.m. peak hour. However, the

intersection would not meet Caltrans Traffic Signal Warrant 3 (Peak Hour), and therefore, the cumulative impact would be less than significant.

In addition, the signalized intersection of Sagamore Street and Plymouth, San José, and Sickles Avenues would operate at LOS F during the weekday p.m. peak hour. The proposed project would add 12 vehicle trips to the westbound critical through movement that would operate at LOS F, which represent a 1.3-percent contribution to this critical movement, and therefore, the proposed project’s contribution to the 2035 Cumulative operating conditions would be considered less than significant.

Even though the project’s contribution to cumulative impacts would be less than significant, a vehicle trip reduction improvement measure has been recommended, which would have SFRPD develop a TDM program for its recreational programs, particularly as it relates to project’s recreational field use, to encourage methods to reduce vehicle trips (see **Improvement Measure IM-TR-1**).

<i>Topics:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
6. NOISE —Would the project:					
a) Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<u>Topics:</u>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Be substantially affected by existing noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The project site is not within an airport land use plan area, nor is it in the vicinity of a private airstrip. Therefore, topics 6e and 6f are not applicable.

Impact NO-1: The proposed project would not result in a substantial permanent increase in ambient noise levels in the project vicinity, and it would not expose persons to noise levels in excess of standards established in the local general plan or noise ordinance. (Less than Significant)

Sensitive receptors are people requiring quiet, for sleep or concentration, such as residences, schools, or hospitals, and convalescent homes. The nearest sensitive receptors to the project site are residents living across from the park along Lobos Street, Plymouth Avenue, and Capitol Avenue (approximately 60 to 70 feet south, east, and west, of the park, respectively). Residents to the north along Montana Street are farther away from the field itself and are partially blocked by the existing recreational center. Other nearby receptors include students approximately 100 feet from the park that attend Sheridan Elementary School, located directly southwest of the project site at the southeast corner of Capitol Avenue and Lobos Street.

Ambient noise levels in the project vicinity are typical of noise levels in greater San Francisco, which are dominated by vehicular traffic, including trucks, cars, Muni buses and light rail vehicles, and emergency vehicles. Based on modeling of traffic noise volumes conducted by the San Francisco Department of Public Health (DPH),¹⁸ noise levels on streets bordering the athletic field range from 50 to 55 dBA along Lobos Street, and 60 to 70 dBA along Plymouth Avenue and Capitol Avenue. Noise levels on the field itself are estimated between 55 and 60 dBA.

Generally, traffic must double in volume to produce a noticeable increase in average noise levels. Traffic volumes are not anticipated to double on area streets as a result of the proposed project.

¹⁸ Noise map available on CCSF website: http://www.sf-planning.org/ftp/files/publications_reports/library_of_cartography/Noise.pdf.

Increased noise levels in areas adjacent to the project site would result primarily from additional use of the field by park users (human voices). Installation of synthetic turf and field lighting would increase the availability of the playfields for use by the public. The new turf would allow for increased use due to improved surface conditions in comparison to the existing natural turf as well as greater use during rain events when the field is not currently usable. Nighttime lighting would extend the hours available for use into the evening until 10:00 p.m. The installation of additional bleachers at the softball/little league field could also result in higher noise levels in that corner of the playfields. The project does not include installing an amplified sound system.

The use of the field as a recreational facility would not change as a result of the project. Additional park users are expected though, during both daytime and nighttime periods. However, noise levels generated by human voices would be intermittent, and at their peak, would not be expected to substantially exceed noise levels currently generated at the park. Therefore, the project would not result in substantial permanent increase in ambient noise levels in the project vicinity or expose persons in excess of noise level standards; the impact would be less than significant.

Impact NO-2: During construction, the proposed project would not result in a substantial temporary or periodic increase in ambient noise levels and vibration in the project vicinity above levels existing without the project. (Less than Significant)

Project construction would temporarily increase noise in the project vicinity. Construction equipment would generate noise that could affect sensitive receptors (nearby residents and students at Sheridan Elementary School). However, the improvements are not anticipated to generate noise levels in excess of standards established in the San Francisco *General Plan* or the San Francisco Noise Ordinance. Construction noise levels would fluctuate depending on construction phase, equipment type, and duration of use, and the distance between noise source and listener. Project construction would be approximately eight months and would require standard earth moving equipment for grading, large trucks for hauling, and a small crane to lift the proposed light standards.

Construction noise is regulated by the San Francisco Noise Ordinance (Article 29 of the *Police Code*), amended in November 2008. The ordinance requires that noise levels from individual pieces of construction equipment, other than impact tools, not exceed 80 dBA at a distance of

100 feet from the source. Impact tools must have both intake and exhaust muffled to the satisfaction of the Director of Public Works. Section 2908 of the Ordinance prohibits construction work between 8:00 p.m. and 7:00 a.m. if noise would exceed the ambient noise level by 5 dBA at the project property line, unless a special permit is authorized by the Director of Public Works. The project must comply with regulations set forth in the Noise Ordinance.

Construction activities other than pile driving typically generate noise levels no greater than 90 dBA at 50 feet from the activity, while other activities, such as concrete work, are much less noisy. Closed windows typically can reduce daytime interior noise levels to an acceptable level. Although construction noise could be annoying at times, it would not be expected to exceed noise levels commonly experienced in an urban environment, and would not be considered significant. The proposed project would not include pile driving, which is typically the most disruptive activity in terms of construction noise. Compliance with the Noise Ordinance and the limited duration of project construction would result in a less than significant impact regarding temporary increases in noise levels.

Construction of the project would also not have the potential to generate excessive groundborne noise or vibration, or include construction of buildings or mechanical equipment that could produce operational noise, such as heating and ventilation systems.

Impact NO-3: The proposed project would not be substantially affected by existing noise levels. (Less than Significant)

The project site is currently used as a recreational facility and that use would continue under the proposed project. The park is surrounded primarily by a residential neighborhood that would not be expected to generate substantial noise in excess of current levels. Therefore, the impact on the project site would be less than significant.

Impact NO-4: The proposed project, in combination with past, present, and reasonably foreseeable future projects, would result in less-than-significant cumulative noise impacts. (Less than Significant)

There are no other projects of sufficient magnitude in the project vicinity that would generate substantial noise, either due to construction or operation (e.g., traffic or mechanical noise).

Moreover, no other construction projects are proposed in close enough proximity to the project site such that cumulative effects related to construction noise would be anticipated.

<i>Topics:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
7. AIR QUALITY—Would the project:					
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal, state, or regional ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

BAAQMD adopted updated *California Environmental Quality Act (CEQA) Air Quality Guidelines*, including new thresholds of significance in June 2010 and revised in May 2011.¹⁹ These Guidelines specify how lead agencies should evaluate potential air quality impacts and apply the adopted new thresholds of significance. The analysis herein uses the updated thresholds and methodologies from the BAAQMD *CEQA Air Quality Guidelines* to determine the potential impacts of construction and operations of the proposed project.

Project-related air quality impacts fall into two categories: short-term impacts due to construction, and long-term impacts due to project operation. First, during project construction (short-term), the project would affect local particulate concentrations primarily due to fugitive dust sources as well as generate exhaust emissions of both criteria pollutants and toxic air contaminants (TACs) from off-road equipment, worker vehicles, and haul trucks. (Potential impacts from emissions of TACs

¹⁹ Bay Area Air Quality Management District (BAAQMD), 2011. *CEQA Air Quality Guidelines*, revised May 2011. Available at <http://www.baaqmd.gov>.

are discussed below under Impact AQ-4.) Under project operations (long-term), the project would result in an increase in emissions primarily due to related motor vehicle trips. Criteria air pollutant emissions associated with project-related construction and operational emissions was estimated using the URBEMIS2007 (Version 9.2.4) model.

The analysis of construction impacts used URBEMIS default values for construction equipment load factors and construction worker trip generation. Vendor trip generation (e.g., trucks delivering drainage rock or sod) were included in the URBEMIS model for each construction phase. Model inputs used information in Table 3 (in the Project Description) for equipment mix, equipment operational characteristics, and construction-phase durations.

In regards to operations, traffic on Saturday, the day with the potential for the largest increase in use of the athletic fields, was estimated to be a worst-case scenario. The increase in traffic volume on Saturday would be 440 daily one-way vehicle trips (220 round trips), based on the expected travel mode split developed for the Transportation Impact Study for the proposed project. This trip generation was input into URBEMIS, as well as the default model vehicle fleet mix and urban trip length assumptions. Landscaping emissions are also included in the analysis based on URBEMIS defaults.

Impact AQ-1: Construction of the proposed project would not violate an air quality standard or contribute to an existing or projected air quality violation. (Less than Significant)

The proposed renovations to the Minnie and Lovie Ward Playfields would occur on a park site that is surrounded on all four sides by single and two-family residential homes, and a school located to the southwest. There are no known major emission sources in the vicinity of the project. Review of Bay Area Air Quality Management District (BAAQMD) Google-Earth database indicates that there are no stationary sources permitted by the BAAQMD within 1,000 feet of the project site. Major roadway sources (>10,000 average daily traffic [ADT]) that are within approximately 1,000 feet of the project site include San Jose Avenue, which is approximately 950 feet southeast of the project site, and Interstate Highway 280, which is about 1,175 feet southeast.

There are three projects (259 Broad Street—addition of a partial third story to an existing two-story residential building; 42 Miramar Avenue—demolition of an existing two-story residence and construction of a new three-story house, and 33 Lee Avenue—construction of a two-story

rear addition to an existing residence) that could be under construction at the same time as the proposed project. Each project is more than 800 feet from the proposed project site.

Project construction would occur in mostly consecutive stages. Some activities such as tree removal and fencing installation could occur concurrently with other activities. Table 3, in the Project Description, provides the approximate duration of construction work. Construction would occur over approximately eight months and is anticipated to begin in fall 2012. Construction activities would include use of standard earth-moving equipment for grading, large trucks for hauling, and a small crane to lift the proposed light standards. The project would require excavation to a depth of approximately 1 foot below the existing ground surface (bgs) over the field area and approximately 10 feet bgs for the installation of the light standards (an area approximately 30 to 36 inches in diameter per light standard). Construction material staging and storage are anticipated to occur within the boundaries of the existing facility. It is estimated that about ten construction workers would be onsite on a daily basis. After the initial delivery of equipment to the site, it is expected that an average of one or two trucks would travel to and from the site per day.

Criteria Air Pollutants

Standards have been established for “criteria” air pollutants to meet specific public health and welfare criteria set forth in the federal Clean Air Act. California has adopted more stringent ambient air quality standards for the criteria air pollutants (referred to as State Ambient Air Quality Standards, or state standards) and has adopted air quality standards for some pollutants for which there is no corresponding federal standard. **Table 5** shows current federal and state ambient air quality standards, as well as the Bay Area attainment status and common sources for each pollutant. The pollutants of particular concern, ozone and particulate matter, for which the Bay Area is non-attainment of federal and state standards, are described in greater detail below.

Ozone

Ozone is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and nitrogen oxides (NO_x). ROG and NO_x are known as precursor compounds for ozone. Significant ozone production generally requires ozone precursors to be present in a stable

**TABLE 5
 AMBIENT AIR QUALITY STANDARDS AND BAY AREA ATTAINMENT STATUS**

Pollutant	Averaging Time	State Standard	Bay Area Attainment Status for California Standard	Federal Primary Standard	Bay Area Attainment Status for Federal Standard	Major Pollutant Sources
Ozone	8 hour	0.070 ppm	Non-Attainment	0.075 ppm	Non-Attainment	Formed when ROG and NO _x react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial/ industrial mobile equipment.
	1 hour	0.090 ppm	Non-Attainment	---	---	
Carbon Monoxide	8 hour	9.0 ppm	Attainment	9.0 ppm	Attainment	Internal combustion engines, primarily gasoline-powered motor vehicles
	1 Hour	20 ppm	Attainment	35 ppm	Attainment	
Nitrogen Dioxide	Annual Average	0.030 ppm	---	0.053 ppm	Attainment	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads
	1 Hour	0.180 ppm	Attainment	0.100 ppm	Unclassified	
Sulfur Dioxide	Annual Average	---	---	0.03 ppm	Attainment	Fuel combustion, chemical plants, sulfur recovery plants and metal processing
	24 Hour	0.04 ppm	Attainment	0.14 ppm	Attainment	
	1 Hour	0.25 ppm	Attainment	0.075 ppm	Attainment	
Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	20 µg/m ³	Non-Attainment	---	---	Dust- and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays)
	24 hour	50 µg/m ³	Non-Attainment	150 µg/m ³	Unclassified	
Particulate Matter (PM _{2.5})	Annual Arithmetic Mean	12 µg/m ³	Non-Attainment	15 µg/m ³	Attainment	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; also, formed from photochemical reactions of other pollutants, including NO _x , sulfur oxides, and organics.
	24 hour	---	---	35 µg/m ³	Non-Attainment	
Lead	Calendar Quarter	---	---	1.5 µg/m ³	Attainment	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	30 Day Average	1.5 µg/m ³	Attainment	---	---	
Hydrogen Sulfide	1 hour	0.03 ppm	Unclassified	No Federal Standard	---	Geothermal Power Plants, Petroleum Production and refining
Visibility Reducing Particles	8 hour	Extinction of 0.23/km; visibility of 10 miles or more	Unclassified	No Federal Standard	---	See PM _{2.5} .

NOTE: ppm=parts per million; and µg/m³=micrograms per cubic meter

SOURCES: Bay Area Air Quality Management District, 2011a, available at http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm as of October 6, 2011; California Air Resources Board, 2009. ARB Fact Sheet: Air Pollution Sources, Effects and Control, <http://www.arb.ca.gov/research/health/fs/fs2/fs2.htm>, page last reviewed December 2009

atmosphere with strong sunlight for approximately three hours. Ozone is a regional air pollutant because it is not emitted directly by sources, but is formed downwind of sources of ROG and NO_x under the influence of wind and sunlight. Ozone concentrations tend to be higher in the late spring, summer, and fall, when the long sunny days combine with regional subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds, like ozone. Short-term exposure to ozone can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, ozone can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

Particulate Matter

PM₁₀ and PM_{2.5} consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. (A micron is one-millionth of a meter.) Some sources of particulate matter, such as wood burning in fireplaces, demolition, and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. PM₁₀ and PM_{2.5} represent fractions of particulate matter that can be inhaled into the air passages and the lungs and can cause adverse health effects. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. Particulates also can damage materials and reduce visibility. Large dust particles (diameter greater than 10 microns) settle out rapidly and are easily filtered by human breathing passages. This large dust is of more concern as a soiling nuisance rather than a health hazard. The remaining fraction, PM₁₀ and PM_{2.5}, are a health concern particularly at levels above the federal and state ambient air quality standards. PM_{2.5} (including diesel exhaust particles) is thought to have greater effects on health, because these particles are so small and thus, are able to penetrate to the deepest parts of the lungs.

Scientific studies have suggested links between fine particulate matter and numerous health problems including asthma, bronchitis, acute and chronic respiratory symptoms such as shortness of breath and painful breathing. Recent studies have shown an association between morbidity and mortality and daily concentrations of particulate matter in the air. Children are more susceptible to the health risks of PM₁₀ and PM_{2.5} because their immune and respiratory systems are still developing. Mortality studies since the 1990s have shown a statistically significant direct association between mortality (premature deaths) and daily concentrations of particulate matter in the air. Despite important gaps in scientific knowledge, a comprehensive

evaluation of the research findings provides persuasive evidence that exposure to fine particulate air pollution has adverse effects on cardiopulmonary health (Dockery and Pope, 2006; Bhatia and Rivard, 2008).

The proposed site preparation activities, such as site mobilization, clearing and grubbing, tree removal and trimming, demolition, excavation, grading, and other construction activities, such as pouring of concrete curbs and walkways, installation of light poles and new fencing, and installation of the new turf field, would generate ozone precursor emissions (i.e., ROG and NO_x) and other criteria pollutants from equipment exhaust, construction-related vehicular activity, and construction worker automobile trips. Emission levels for these activities would vary depending on the number and type of equipment, duration of use, operation schedules, and the number of construction workers. Criteria pollutant emissions of ROG and NO_x from these emission sources would incrementally add to the regional atmospheric loading of ozone precursors during project development. Emissions were estimated using the URBEMIS2007 model and are depicted below in **Table 6**.

TABLE 6
PEAK DAY CONSTRUCTION-RELATED CRITERIA POLLUTANT EMISSIONS (Pounds/Day)^a

Year	ROG	NO _x	CO	SO ₂	Exhaust PM ₁₀ ^b	Exhaust PM _{2.5} ^b
2012 (Unmitigated Emissions)	4	31	16	<1	1	1
2013 (Unmitigated Emissions)	1	10	6	<1	1	1
<i>BAAQMD Construction Threshold</i>	54	54	None	None	82	54
Significant Impact?	No	No	No	No	No	No

^a Emissions were modeled using URBEMIS2007 and assume renovations would proceed through the phases and involving the equipment described in the project description, with the addition of a water truck during earthwork activities. Construction was assumed to start September 2012 for a duration of eight months. Additional information is included in Appendix AIR-2.

^b BAAQMD's proposed construction-related significance thresholds for PM₁₀ and PM_{2.5} apply to exhaust emissions only and not to fugitive dust.

The project would be implemented by the SFRPD and would be subject to the "Clean Construction Ordinance" (Ordinance #70-07). The ordinance requires City contractors to adopt clean construction practices including biodiesel fuel and emissions controls for all large City-financed construction projects. The ordinance is applicable to projects that are considered major, in that they would take at least 20 days of cumulative work to complete. In addition, for those

major projects, the emissions control requirements will apply to “high use” vehicles or diesel equipment, that are used 20 or more hours during any portion of the project. Contractors performing major public works projects in San Francisco must comply with the following:

- Use biodiesel in the off-road vehicles and equipment used on the job. The fuel must be at least a 20 percent blend of biodiesel (B20), but can be as high as 100 percent (B100); and
- Use construction equipment (25 horsepower [hp] or more) with engines that either:
 - Meet United States Environmental Protection Agency (USEPA) Tier 2 standards for off-road engines; or
 - Use the most “effective verified diesel emission control strategy”, also known as “best available control technology.”

URBEMIS2007 does not include reductions for the above-mentioned measures. The emissions data shown in Table 6 represent a conservative analysis since it does not account for compliance with the Clean Construction Ordinance. Actual construction emissions for the project would be slightly lower than the values in Table 6 due to the project’s compliance with the ordinance. Model inputs used information in Table 3 for equipment mix, equipment operational characteristics, and construction-phase durations. Criteria pollutant exhaust emissions associated with the project would not exceed any BAAQMD thresholds and would result in a less than significant impact.

Impact AQ-2: Construction of the proposed project would not generate a substantial amount of fugitive dust emissions. (Less than Significant)

The San Francisco Board of Supervisors approved a series of amendments to the San Francisco Building and Health Codes called the Construction Dust Control Ordinance (Ordinance 176-08, effective July 30, 2008) with the intent of reducing the quantity of dust generated during site preparation, demolition, and construction work in order to protect the health of the general public and of on-site workers, minimize public nuisance complaints, and to avoid orders to stop work by the Department of Building Inspection (DBI).

For projects over one-half acre in size, such as the proposed project, applicants must submit a map showing the location of the project and clearly identifying all surrounding sensitive receptors, especially within 1,000 feet of the project. For projects within 1,000 feet of sensitive receptors, the applicant shall submit a site-specific Dust Control Plan to the Director of DBI for

approval. Site-specific Dust Control Plans under the Ordinance require the project sponsor to carry out the following tasks:

- Submit a map to the Director of DBI showing all sensitive receptors within 1,000 feet of the site;
- Wet down areas around soil improvement operations, visibly dry disturbed soil surface areas, and visibly dry disturbed unpaved driveways at least three times per shift per day;
- Provide an analysis of wind direction and install upwind and downwind particulate dust monitors;
- Record particulate monitoring results;
- Hire an independent, third party to conduct inspections and keep a record of those inspections;
- Establish shut-down conditions based on dust crossing the property boundary or if dust is contained within the property boundary but not controlled after a specified number of minutes;
- Establish a hotline for surrounding community members to call and report visible dust problems so that the project applicant can promptly fix those problem; posting signs around the site with the hotline number and making sure that the number is given to adjacent residents, schools and businesses;
- Limit the area subject to excavation, grading, and other demolition or construction activities at any one time;
- Minimize the amount of excavated material or waste materials stored at the site;
- Install dust curtains, plastic tarps or windbreaks, or planting tree windbreaks on the property line on windward and down windward sides of construction areas, as necessary;
- Pave, apply water three times daily, or apply non-toxic soil stabilizers on all unpaved access roads, parking areas and staging areas at the construction site. Reclaimed water must be used if required by Article 21, Section 1100 et seq. of the San Francisco Public Works Code, Article 22. If not required, reclaimed water should be used whenever possible;
- Load haul trucks carrying excavated material and other non-excavated material so that the material does not extend above the walls or back of the truck bed. Tightly cover with tarpaulins or other effective covers all trucks hauling soil, sand, and other loose materials before the trucks leave the loading area. Wet prior to covering if needed;
- Enforce a 15-mph speed limit for vehicles entering and exiting construction areas;
- Sweep affected streets with water sweepers at the end of the day if visible soil material is carried onto adjacent paved roads. Reclaimed water must be used if required by Article 21, Section 1100 et sea, of the San Francisco Public Works Code. If not required, reclaimed water should be used whenever possible;

- Install and utilize wheel washers to clean all trucks and equipment leaving the construction site. If wheel washers cannot be installed, tires or tracks and spoil trucks shall be brushed off before they reenter City streets to minimize deposition of dust-causing materials;
- Terminate construction activities when winds exceed 25 miles per hour;
- Hydroseed inactive construction areas, including previously graded areas inactive for at least 10 calendar days, or applying non-toxic soil stabilizers; and
- Sweep of surrounding streets during demolition, excavation and construction at least once per day to reduce particulate emissions.

The Ordinance requires that the project sponsor designate an individual to monitor compliance with dust control requirements. The above regulations and procedures set forth by the San Francisco Health Code would ensure that the BAAQMD-recommended Best Management Practices would be employed. According to the BAAQMD threshold of significance for construction impacts, implementation of these measures would ensure that construction dust impacts of the proposed project would be less than significant.

Impact AQ-3: Operation of the proposed project would not violate an air quality standard or contribute to an existing or projected air quality violation. (Less than Significant)

The proposed project would generate an increase of approximately 440 one-way vehicle trips each Saturday, and fewer daily trips during the rest of the week. Operational emissions were estimated using the URBEMIS2007 model and are depicted below in **Table 7**. Additional assumptions and information are included in Appendix AIR-2. As shown in Table 7, the incremental increase in long-term operational emissions of the project would be less than significant.

**TABLE 7
PEAK DAY OPERATION-RELATED CRITERIA POLLUTANT EMISSIONS (Pounds/Day)^a**

Year	ROG	NO _x	PM ₁₀	PM _{2.5}
Area Sources	<1	<1	<1	<1
On-road Vehicles	2	3	6	1
Total Operational Emissions	2	3	6	1
<i>BAAQMD Operational Threshold</i>	54	54	82	54
Significant Impact?	No	No	No	No

^a Emissions were modeled using URBEMIS2007 and assume 440 daily trips and default assumptions regarding landscape equipment (area sources). Additional information is included in Appendix AIR-2.

As an additional analysis to comply with the BAAQMD *CEQA Air Quality Guidelines* regarding carbon monoxide (CO), a proposed project would result in a less-than-significant impact to localized CO concentrations if the following screening criteria are met:

1. Project is consistent with an applicable congestion management program established by the congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.
2. The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
3. The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

Since the project would generate an insubstantial increase in traffic volumes, it would be consistent with the above Criterion 1, and would not exceed the traffic volumes in Criteria 2 and 3. Thus, based on the BAAQMD's criteria, project-related traffic would not lead to violations of the carbon monoxide standards and therefore, the impact would be considered less than significant.

Impact AQ-4: Construction of the proposed project would not expose sensitive receptors to substantial pollutant concentrations. (Less than Significant)

Toxic air contaminants (TACs) are air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations. There are hundreds of different types of TACs with varying degrees of toxicity. For the proposed project, the TAC of greatest concern is diesel particulate matter (DPM) that would be emitted by heavy construction equipment. Air quality emissions associated with synthetic turf is discussed in Section E.16, Hazards and Hazardous Materials.

The BAAQMD *CEQA Guidelines* contain recommended thresholds for risks and hazards associated with TAC emissions from an individual project undergoing environmental review pursuant to CEQA. In addition to the evaluation of the individual project, the BAAQMD *CEQA Guidelines* recommend a cumulative evaluation that takes into account the project in addition to other emissions sources within a 1,000 foot zone of influence surrounding the project site. Consistent with the recommendations and methodology of these guidelines, a Health Risk Assessment (HRA) was prepared for the proposed project that evaluates the estimated cancer

risk, non-cancer chronic and acute hazard indices (HIs), and PM_{2.5} concentrations associated with diesel exhaust that will be emitted by heavy equipment used in construction.²⁰ The analysis also estimates excess lifetime cancer risks, HIs, and PM_{2.5} concentrations that are attributable to other sources within the zone of influence, in addition to the effects from the project.

The HRA follows the BAAQMD's *Recommended Methods for Screening and Modeling Local Risks and Hazards* (2010), California Air Pollution Control Officers Association's (CAPCOA) *Health Risk Assessments for Proposed Land Use Projects* (2009), and California Office of Environmental Health and Hazard Assessment (OEHHA) guidance for air modeling required in Health Risk Assessments. The results of the health risk analyses are compared with the BAAQMD significance thresholds for single source and cumulative impacts as follows:

Single source:

- An excess lifetime cancer risk level of more than 10 in one million;
- A non-cancer (both chronic or acute) hazard index (HI) greater than 1.0; and
- An incremental increase in the annual average PM_{2.5} of greater than 0.3 micrograms per cubic meter (µg/m³).

Cumulative impacts:

- An excess lifetime cancer risk level of more than 100 in one million;
- A chronic non-cancer HI greater than 10.0; and
- An incremental increase in the annual average PM_{2.5} of greater than 0.8 µg/m³.

Existing receptors in the vicinity of the project site would be exposed to TAC emissions generated during construction of the project. It should be noted that this is a conservative assumption as it assumes that the maximally exposed individual (MEI) would be exposed to the annual average concentration throughout the construction period, when during the actual construction process equipment location would vary within the project site (and TAC concentrations around the site would change).

As shown in **Table 8**, the HRA determined that the MEI would be exposed to an incremental cancer risk of 9.19 in one million, which is below the BAAQMD threshold of 10 in one million. As discussed under Impact AQ-1, this represents a conservative risk since it does not account for the

²⁰ Environmental Science Associates, *Minnie and Lovie Ward Athletic Fields, Air Quality Technical Report*, 2012. This document is available for review at 1650 Mission Street, Suite 400, San Francisco, CA in File No. 2011.0148E.

**TABLE 8
HEALTH RISK ASSESSMENT RESULTS**

Year	Cancer Risk ^a	PM _{2.5} ^b	Chronic HI ^c	Acute HI	Exceeds Threshold?
<i>Project Construction</i>					
Residential Infant Receptor	9.19	0.14	0.028	0.07	No
Child Receptor	2.76				No
<i>Roadways</i>					
Interstate Highway 280	1.35	0.012	0.001		No
San Jose Avenue	0.06	0	0.0000739		No
Subtotal	1.41	0.012	0.001		No
Total (maximum)	12.01	0.15	0.03		
Exceeds Cumulative Thresholds?	No	No	No		

^a Chances in one million

^b Micrograms per cubic meter

^c There is no Acute HI cumulative threshold, thus only project Acute HI is reported

project's required compliance with the Clean Construction Ordinance. Actual construction emissions for the project would be slightly lower due to the project's compliance with the ordinance. The MEI in this case represents an infant at the residential receptors exposed to emissions during the entire duration of construction. The maximum incremental cancer risk at the student receptors at the Sheridan Elementary School would be 2.76 in one million. Thus, incremental cancer risks from the project would be below the BAAQMD threshold. The impact would be less than significant.

TAC exposure from the project's construction emissions would result in a chronic hazard index of 0.028, which is well below the BAAQMD threshold of 1.0; therefore, chronic non-cancer health impacts at existing receptors would be less than significant. Results of the analysis also indicate that the maximum annual average PM_{2.5} concentration would be 0.14 µg/m³ near the construction site, which is below the BAAQMD's significance threshold of 0.3 µg/m³. Therefore, PM_{2.5} concentrations from construction-related DPM emissions would be less than significant.

TAC exposure from the project's construction emissions would result in an acute hazard index of 0.07, which is well below the BAAQMD threshold of 1.0; therefore, chronic non-cancer health impacts at existing receptors would be less than significant.

Impact AQ-5: Operation of the proposed project would not expose sensitive receptors to substantial pollutant concentration (Less than Significant)

Review of the BAAQMD Google-Earth database indicates that there are no stationary sources permitted by the BAAQMD within 1,000 feet of the project site. Major roadway sources (>10,000 ADT) that are within approximately 1,000 feet of project facility site include San Jose Avenue, which is approximately 950 feet southeast of the project site, and Interstate Highway 280, which is 1,175 feet southeast. As shown in Table 8, San Jose Avenue and Interstate 280 together contributes to a cancer risk of 1.41 in one million, a PM_{2.5} concentration of 0.012 µg/m³, and chronic hazard index of 0.001, and both sources do not exceed the individual or cumulative threshold. The increase in project-generated traffic volume on Saturday (worst-case scenario) would be 440 daily one-way vehicle trips (220 round trips), based on the expected travel mode split developed for the Transportation Impact Study for the proposed project. The additional 440 daily vehicle trips would result in a negligible increase in health risk for local receptors. The BAAQMD recommends health risk assessment of roadway traffic for roadways that carry more than 10,000 daily vehicles. The proposed project would not cause any roadway to exceed this threshold, and would not make a measureable contribution to any roadways, such as San Jose Avenue or Interstate 280, that already exceed this threshold. Accordingly, the project's impact would be less than significant.

Impact AQ-6: The proposed project would be consistent with applicable air quality plans. (Less than Significant)

The proposed project would be generally consistent with the General Plan and air quality management plans such as the 2010 Clean Air Plan, which is the applicable regional air quality plan developed for attainment of state air quality standards. Additionally, the General Plan, Planning Code, and the City Charter implement various transportation control measures identified in the City's Transit First Program, bicycle parking regulations, transit development fees, and other actions. Accordingly, the proposed project would not interfere with implementation of the 2010 Clean Air Plan, and this impact would be less than significant.

Impact AQ-7: The proposed project would not create objectionable odors affecting a substantial number of people. (No Impact)

The project proposes the renovation of the Minnie and Lovie Ward Playfields, including the conversion of the existing grass playfields to synthetic turf. The project would not result in a

perceptible increase or change in odors on the project site or in the vicinity of the project site, as it would not include uses prone to generation of odors.

Impact C-AQ-1: Construction and operation of the proposed project would not result in a cumulatively considerable net increase in criteria air pollutants or otherwise conflict with regional air quality plans. (Less than Significant)

With respect to cumulative criteria air pollutant impacts, BAAQMD's approach to cumulative air quality analysis is that any proposed project that would exceed the criteria air pollutant thresholds of significance would also be considered to result in a cumulatively considerable increase in criteria air pollutants. As discussed in Impacts AQ-1 and AQ-3, the proposed project would result in less-than-significant impacts related to construction and operational criteria air pollutant emissions. Therefore, the proposed project's contribution to cumulative criteria air pollutant impacts is less than significant, and the proposed project would not conflict with any regional air quality plan.

Impact C-AQ-2: Operation of the proposed project would not expose sensitive receptors to cumulative sources of air pollutants. (Less than Significant)

The BAAQMD recommends cumulative thresholds of an increased cancer risk of 100 in one million, acute or chronic hazard index greater than 10.0, and a PM_{2.5} concentration greater than 0.8 micrograms per cubic meter. If the total of all roadway and point sources within 1,000 feet of the proposed project exceed these cumulative thresholds, the project would be considered to expose sensitive receptors to a significant cumulative health risk impact.

As shown in Table 8, above, San Jose Avenue and Interstate 280 together contributes to a cancer risk of 1.41 in one million, a PM_{2.5} concentration of 0.012 µg/m³, and chronic hazard index of 0.001. There are no stationary sources within the vicinity of the project site. Therefore, the cumulative risk from stationary and mobile sources would be below BAAQMD cumulative thresholds of significance.

The increase in traffic volume on Saturday (worst-case scenario) attributable to the project would be 440 daily one-way vehicle trips (220 round trips). The additional 440 daily vehicle trips would result in a negligible increase in health risk for local receptors. Therefore, the project's

incremental contribution to cumulative operation health risks would not be considerable and the impact would be less than significant.

Impact C-AQ-3: Construction of the proposed project would not expose sensitive receptors to cumulative sources of air pollutants. (Less than Significant)

There are three projects (259 Broad Street, 42 Miramar Avenue, and 33 Lee Avenue) that could be under construction at the same time as the proposed project, but each is more than 800 feet from the proposed project site. Due to the small size of these projects, and the fact that all are more than 300 feet from the proposed project construction site, these projects are not anticipated to contribute to significant cumulative health risks at the receptors most affected by the proposed project. Therefore, the project’s incremental contribution to cumulative construction-related health risks would not be considerable and the impact would be less than significant.

<i>Topics:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
8. GREENHOUSE GAS EMISSIONS— Would the project:					
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Gases that trap heat in the atmosphere are referred to as greenhouse gases (GHGs) because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHG’s has been implicated as the driving force for global climate change. The primary GHGs are carbon dioxide, methane, nitrous oxide, ozone, and water vapor.

While the presence of the primary GHGs in the atmosphere are naturally occurring, carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) are largely emitted from human activities, accelerating the rate at which these compounds occur within earth’s atmosphere.

Emissions of carbon dioxide are largely by-products of fossil fuel combustion, whereas methane results from off-gassing associated with agricultural practices and landfills. Other GHGs include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, and are generated in certain industrial processes. Greenhouse gases are typically reported in “carbon dioxide-equivalent” measures (CO₂E).²¹

There is international scientific consensus that human-caused increases in GHGs have and will continue to contribute to global warming. Potential global warming impacts in California may include, but are not limited to, loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.²²

The Air Resources Board (ARB) estimated that in 2006 California produced about 484 million gross metric tons of CO₂E (MMTCO₂E), or about 535 million U.S. tons.²³ The ARB found that transportation is the source of 38 percent of the State’s GHG emissions, followed by electricity generation (both in-state and out-of-state) at 22 percent and industrial sources at 20 percent. Commercial and residential fuel use (primarily for heating) accounted for 9 percent of GHG emissions.²⁴ In the Bay Area, fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) and the industrial and commercial sectors are the two largest sources of GHG emissions, each accounting for approximately 36% of the Bay Area’s 95.8 MMTCO₂E emitted in 2007.²⁵ Electricity generation accounts for approximately 16% of the Bay Area’s GHG emissions followed by residential fuel usage at 7%, off-road equipment at 3% and agriculture at 1%.²⁶

²¹ Because of the differential heat absorption potential of various GHGs, GHG emissions are frequently measured in “carbon dioxide-equivalents,” which present a weighted average based on each gas’s heat absorption (or “global warming”) potential.

²² California Climate Change Portal. Frequently Asked Questions About Global Climate Change. Available online at: <http://www.climatechange.ca.gov/publications/faqs.html>. Accessed November 8, 2010.

²³ California Air Resources Board (ARB), “California Greenhouse Gas Inventory for 2000-2006— by Category as Defined in the Scoping Plan.” http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_2009-03-13.pdf. Accessed March 2, 2010.

²⁴ *Ibid.*

²⁵ Bay Area Air Quality Management District, Source Inventory of Bay Area Greenhouse Gas Emissions: Base Year 2007, Updated: February 2010. Available online at: http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Emission%20Inventory/regionalinventory2007_2_10.ashx. Accessed March 2, 2010.

²⁶ *Ibid.*

In 2006, the California legislature passed Assembly Bill No. 32 (California Health and Safety Code Division 25.5, Sections 38500, et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 requires ARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions).

Pursuant to AB 32, ARB adopted a Scoping Plan in December 2008, outlining measures to meet the 2020 GHG reduction limits. In order to meet these goals, California must reduce its GHG emissions by 30 percent below projected 2020 business as usual emissions levels, or about 15 percent from today's levels.²⁷ The Scoping Plan estimates a reduction of 174 million metric tons of CO₂E (MMTCO₂E) (about 191 million U.S. tons) from the transportation, energy, agriculture, forestry, and high global warming potential sectors, see **Table 9**, below. ARB has identified an implementation timeline for the GHG reduction strategies in the Scoping Plan.²⁸ Some measures may require new legislation to implement, some will require subsidies, some have already been developed, and some will require additional effort to evaluate and quantify. Additionally, some emissions reductions strategies may require their own environmental review under CEQA or the National Environmental Policy Act (NEPA).

AB 32 also anticipates that local government actions will result in reduced GHG emissions. ARB has identified a GHG reduction target of 15 percent from current levels for local governments themselves and notes that successful implementation of the plan relies on local governments' land use planning and urban growth decisions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions.

The Scoping Plan relies on the requirements of Senate Bill 375 (SB 375) to implement the carbon emission reductions anticipated from land use decisions. SB 375 was enacted to align local land use and transportation planning to further achieve the State's GHG reduction goals. SB 375 requires regional transportation plans, developed by Metropolitan Planning Organizations (MPOs), to incorporate a "sustainable communities strategy" in their regional transportation

²⁷ California Air Resources Board, California's Climate Plan: Fact Sheet. Available online at: http://www.arb.ca.gov/cc/facts/scoping_plan_fs.pdf. Accessed March 4, 2010.

²⁸ California Air Resources Board. AB 32 Scoping Plan. Available Online at: http://www.arb.ca.gov/cc/scopingplan/sp_measures_implementation_timeline.pdf. Accessed March 2, 2010.

**TABLE 9
GHG REDUCTIONS FROM THE AB 32 SCOPING PLAN SECTORS**

GHG Reduction Measures By Sector	GHG Reductions (MMT CO ₂ E)
Transportation Sector	62.3
Electricity and Natural Gas	49.7
Industry	1.4
Landfill Methane Control Measure (Discrete Early Action)	1
Forestry	5
High Global Warming Potential GHGs	20.2
Additional Reductions Needed to Achieve the GHG Cap	34.4
Total	174
Other Recommended Measures	
Government Operations	1-2
Agriculture- Methane Capture at Large Dairies	1
Methane Capture at Large Dairies	1
Additional GHG Reduction Measures	
Water	4.8
Green Buildings	26
High Recycling/ Zero Waste	
• Commercial Recycling	
• Composting	
• Anaerobic Digestion	9
• Extended Producer Responsibility	
• Environmentally Preferable Purchasing	
Total	42.8-43.8

plans (RTPs) that would achieve GHG emission reduction targets set by ARB. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit-oriented development. SB 375 would be implemented over the next several years and the Metropolitan Transportation Commission's 2013 RTP would be its first plan subject to SB 375.

Senate Bill 97 (SB 97) required the Office of Planning and Research (OPR) to amend the state CEQA guidelines to address the feasible mitigation of GHG emissions or the effects of GHGs. In response, OPR amended the CEQA guidelines to provide guidance for analyzing GHG emissions. Among other changes to the CEQA Guidelines, the amendments add a new section to the CEQA Checklist (CEQA Guidelines Appendix G) to address questions regarding the project's potential to emit GHGs.

The Bay Area Air Quality Management District (BAAQMD) is the primary agency responsible for air quality regulation in the nine county San Francisco Bay Area Air Basin (SFBAAB). As part

of their role in air quality regulation, BAAQMD has prepared the CEQA air quality guidelines to assist lead agencies in evaluating air quality impacts of projects and plans proposed in the SFBAAB. The guidelines provide procedures for evaluating potential air quality impacts during the environmental review process consistent with CEQA requirements. On June 2, 2010, the BAAQMD adopted new and revised CEQA air quality thresholds of significance and issued revised guidelines that supersede the 1999 air quality guidelines. The *2010 CEQA Air Quality Guidelines* provide for the first time CEQA thresholds of significance for greenhouse gas emissions. OPR's amendments to the CEQA Guidelines as well as BAAQMD's *2010 CEQA Air Quality Guidelines* and thresholds of significance have been incorporated into this analysis accordingly.

Impact GG-1: The proposed project would generate greenhouse gas emissions, but not in levels that would result in a significant impact on the environment or conflict with any policy, plan, or regulation adopted for the purpose of reducing greenhouse gas emissions. (Less than Significant)

The most common GHGs resulting from human activity are CO₂, CH₄, and N₂O.²⁹ State law defines GHGs to also include hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. These latter GHG compounds are usually emitted in industrial processes, and therefore not applicable to the proposed project. Individual projects contribute to the cumulative effects of climate change by directly or indirectly emitting GHGs during construction and operational phases. Direct operational emissions include GHG emissions from new vehicle trips and area sources (natural gas combustion). Indirect emissions include emissions from electricity providers, energy required to pump, treat, and convey water, and emissions associated with landfill operations.

The project proposes the renovation of the Minnie and Lovie Ward Playfields, including the conversion of existing natural grass fields to synthetic turf and the installation of twelve light standards to allow for evening use. The proposed project would result in additional vehicle trips and an increase in energy use. The proposed project would not result in an increase in overall water usage when compared to existing conditions but the project would generate indirect emissions from the energy required to pump, treat, and convey water. The project would also

²⁹ Governor's Office of Planning and Research. *Technical Advisory- CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review*. June 19, 2008. Available at the Office of Planning and Research's website at: <http://www.opr.ca.gov/ceqa/pdfs/june08-ceqa.pdf>. Accessed March 3, 2010.

result in an increase in discarded landfill materials. Therefore, the proposed project would contribute to annual long-term increases in GHGs as a result of operations associated with energy use, water use, and wastewater treatment, and solid waste disposal.

As discussed above, the BAAQMD has adopted CEQA thresholds of significance for projects that emit GHGs, one of which is a determination of whether the proposed project is consistent with a Qualified Greenhouse Gas Reduction Strategy, as defined in the *2010 CEQA Air Quality Guidelines*. On August 12, 2010, the San Francisco Planning Department submitted a draft of the City and County of San Francisco's *Strategies to Address Greenhouse Gas Emissions* to the BAAQMD.³⁰ This document presents a comprehensive assessment of policies, programs and ordinances that collectively represent San Francisco's Qualified Greenhouse Gas Reduction Strategy in compliance with the BAAQMD's *2010 CEQA Air Quality Guidelines* and thresholds of significance.

San Francisco's GHG reduction strategy identifies a number of mandatory requirements and incentives that have measurably reduced greenhouse gas emissions including, but not limited to, increasing the energy efficiency of new and existing buildings, installation of solar panels on building roofs, implementation of a green building strategy, adoption of a zero waste strategy, a construction and demolition debris recovery ordinance, a solar energy generation subsidy, incorporation of alternative fuel vehicles in the City's transportation fleet (including buses and taxis), and a mandatory composting ordinance. The strategy also identifies 42 specific regulations for new development that would reduce a project's GHG emissions.

San Francisco's climate change goals as are identified in the 2008 Greenhouse Gas Reduction Ordinance as follows:

- By 2008, determine the City's 1990 GHG emissions, the baseline level with reference to which target reductions are set;
- Reduce GHG emissions by 25 percent below 1990 levels by 2017;
- Reduce GHG emissions by 40 percent below 1990 levels by 2025; and
- Reduce GHG emissions by 80 percent below 1990 levels by 2050.

³⁰ San Francisco Planning Department. *Strategies to Address Greenhouse Gas Emissions in San Francisco*. 2010. The final document is available online at: <http://www.sfplanning.org/index.aspx?page=1570>.

The City's 2017 and 2025 GHG reduction goals are more aggressive than the State's GHG reduction goals as outlined in AB 32, and consistent with the State's long-term (2050) GHG reduction goals. San Francisco's Strategies to Address Greenhouse Gas Emissions identifies the City's actions to pursue cleaner energy, energy conservation, alternative transportation and solid waste policies, and concludes that San Francisco's policies have resulted in a reduction in greenhouse gas emissions below 1990 levels, meeting statewide AB 32 GHG reduction goals. As reported, San Francisco's 1990 GHG emissions were approximately 8.26 million metric tons (MMT) CO₂E and 2005 GHG emissions are estimated at 7.82 MMTCO₂E, representing an approximately 5.3 percent reduction in GHG emissions below 1990 levels.

The BAAQMD reviewed San Francisco's Strategies to Address Greenhouse Gas Emissions and concluded that the strategy meets the criteria for a Qualified GHG Reduction Strategy as outlined in BAAQMD's CEQA Guidelines (2010) and stated that San Francisco's "aggressive GHG reduction targets and comprehensive strategies help the Bay Area move toward reaching the State's AB 32 goals, and also serve as a model from which other communities can learn."³¹

Based on the BAAQMD's 2010 CEQA Air Quality Guidelines, projects that are consistent with San Francisco's Strategies to Address Greenhouse Gas Emissions would result in a less than significant impact with respect to GHG emissions. Furthermore, because San Francisco's strategy is consistent with AB 32 goals, projects that are consistent with San Francisco's strategy would also not conflict with the State's plan for reducing GHG emissions. As discussed in San Francisco's Strategies to Address Greenhouse Gas Emissions, new development and renovations/alterations for private projects and municipal projects are required to comply with San Francisco's ordinances that reduce greenhouse gas emissions. Applicable requirements for a municipal project are shown below in **Table 10**.

Depending on a proposed project's size, use, and location, a variety of controls are in place to ensure that a proposed project would not impair the State's ability to meet statewide GHG reduction targets outlined in AB 32, nor impact the City's ability to meet San Francisco's local GHG reduction targets. Given that: (1) San Francisco has implemented regulations to reduce

³¹ Letter from Jean Roggenkamp, BAAQMD, to Bill Wycko, San Francisco Planning Department. October 28, 2010. This letter is available online at: <http://www.sfplanning.org/index.aspx?page=1570>. Accessed November 12, 2010.

**TABLE 10
REGULATIONS APPLICABLE TO THE PROPOSED PROJECT**

Regulation	Requirement	Project Compliance	Discussion
Transportation Sector			
Commuter Benefits Ordinance (Environment Code, Section 421)	All City employees are offered commuter benefits for transit and vanpool expenses. The City Hall bike room provides secure bicycle parking, showers and lockers for bicycle commuters. City employees are also eligible for telecommuting and alternative work schedules.	<input checked="" type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply	The proposed project is a municipal project that would be required to comply with all City ordinances.
Emergency Ride Home Program	All City employees are automatically eligible for the emergency ride home program.	<input checked="" type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply	The proposed project is a municipal project that would be required to comply with all City ordinances.
Biodeisel for Municipal Fleets (Executive Directive 06-02)	Requires all diesel using City Departments to begin using biodiesel (B20). Sets goals for all diesel equipment to be run on biodiesel by 2007 and goals for increasing biodiesel blends to B100.	<input checked="" type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply	The proposed project is a municipal project that would be required to comply with all City ordinances.
Clean Construction Ordinance (Administrative Code, Section 6.25)	Effective March 2009, all contracts for large (20+ day) City projects are required to: <ul style="list-style-type: none"> • Fuel diesel vehicles with B20 biodiesel, and • Use construction equipment that meet USEPA Tier 2 standards or best available control technologies for equipment over 25 hp. 	<input checked="" type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply	The proposed project is a municipal project that would be required to comply with all City ordinances.
Waste Reduction Sector			
Resource Conservation Ordinance (Environment Code, Chapter 5)	This ordinance establishes a goal for each City department to (i) maximize purchases of recycled products and (ii) divert from disposal as much solid waste as possible so that the City can meet the state-mandated 50% diversion requirement. Each City department shall prepare a Waste Assessment. The ordinance also requires the Department of the Environment to prepare a Resource Conservation Plan that facilitates waste reduction and recycling. The ordinance requires janitorial contracts to consolidate recyclable materials for pick up. Lastly, the ordinance specifies purchasing requirements for paper products.	<input checked="" type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply	The proposed project is a municipal project that would be required to comply with all City ordinances.

TABLE 10 (Continued)
REGULATIONS APPLICABLE TO THE PROPOSED PROJECT

Regulation	Requirement	Project Compliance	Discussion
Waste Reduction Sector (cont.)			
Mandatory Recycling and Composting Ordinance (Environment Code, Chapter 19)	The mandatory recycling and composting ordinance requires all persons in San Francisco to separate their refuse into recyclables, compostables and trash, and place each type of refuse in a separate container designated for disposal of that type of refuse.	<input checked="" type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply	The proposed project is a municipal project that would be required to comply with all City ordinances.
Construction Recycled Content Ordinance (Administrative Code, Section 6.4)	Ordinance requires the use of recycled content material in public works projects to the maximum extent feasible and gives preference to local manufacturers and industry.	<input checked="" type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply	The proposed project is a municipal project that would be required to comply with all City ordinances.
Environment/Conservation Sector			
Environmentally Preferable Purchasing Ordinance (Formerly Precautionary Purchasing Ordinance)	Requires City Departments to purchase products on the Approved Green Products List, maintained by the Department of the Environment. The items in the Approved Green Products List has been tested by San Francisco City Depts. and meet standards that are more rigorous than ecolabels in protecting our health and environment.	<input checked="" type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply	The proposed project is a municipal project that would be required to comply with all City ordinances.
Tropical Hardwood and Virgin Redwood Ban (Environment Code, Chapter 8)	The ordinance prohibits City departments from procuring, or engaging in contracts that would use the ordinance-listed tropical hardwoods and virgin redwood.	<input checked="" type="checkbox"/> Project Complies <input type="checkbox"/> Not Applicable <input type="checkbox"/> Project Does Not Comply	The proposed project is a municipal project that would be required to comply with all City ordinances.

greenhouse gas emissions specific to new construction and renovations of private developments and municipal projects; (2) San Francisco’s sustainable policies have resulted in the measured success of reduced greenhouse gas emissions levels; (3) San Francisco has met and exceeded AB 32 greenhouse gas reduction goals for the year 2020; (4) current and probable future state and local greenhouse gas reduction measures will continue to reduce a project’s contribution to climate change; and (5) San Francisco’s Strategies to Address Greenhouse Gas Emissions meet BAAQMD’s requirements for a Qualified GHG Reduction Strategy, projects that are consistent with San Francisco’s regulations would not contribute significantly to global climate change. The proposed project would be required to comply with these requirements, and was determined to

be consistent with San Francisco's Strategies to Address Greenhouse Gas Emissions. As such, the proposed project would result in a less than significant impact with respect to GHG emissions.

The SFRPD actions to reduce operational greenhouse gas emissions toward the City's goal of an 80 percent reduction by 2050 include the following: (1) Energy Efficiency and Conservation: The SFRPD is working with the Energy Efficiency Services of the SFPUC to reduce energy use through the selection of operational equipment such as electrical fixtures and sprinkler heads, design standards enforcement, and use of the San Francisco Greening Checklist for exterior spaces; (2) Renewable Energy Generation: The SFRPD is working with the SFPUC to assess its facilities' solar potential and identify potential co generation sites; (3) Information Technology (IT): IT energy conservation measures include power management tools for all personal computers and monitors. The SFRPD plan includes full compliance by the third quarter of fiscal year 2010 with the City's adopted policy of the Committee on Information Technology (COIT); (4) Green Building: The SFRPD plan includes compliance with the City's Environmental Code to achieve Leadership in Energy and Environmental Design (LEED) certification; (5) Fleets and Fuel: The SFRPD has identified specific plans to retire older vehicles to achieve fuel savings, maintenance cost savings, and lower residual costs for older vehicles. Further, the SFRPD only purchases clean light-duty passenger cars and trucks; (6) Employee Commute: The SFRPD plan includes measures to reduce vehicle trips traveled by promoting alternative transportation incentives to its employees; (7) Zero Waste: The SFRPD is close to realizing its goal of 100 percent compliance with the City's recycling initiative; (8) Green Product Purchasing: The SFRPD uses the City's Approved Catalog to purchase environmentally conscious products; (9) Carbon Sequestration: The SFRPD promotes the City's urban forestry program through tree planting campaigns and supports other City departments in their participation in the urban forest program; and (10) Community Wide Emissions: The SFRPD actions include providing community support to reduce greenhouse gas emissions through programs related to recycling, biodiversity, bicycling, and community education.

<u>Topics:</u>	<u>Potentially Significant Impact</u>	<u>Less Than Significant with Mitigation Incorporated</u>	<u>Less Than Significant Impact</u>	<u>No Impact</u>	<u>Not Applicable</u>
9. WIND AND SHADOW—Would the project:					
a) Alter wind in a manner that substantially affects public areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Impact WS-1: The proposed project would not alter wind in a manner that substantially affects public areas. (Less than Significant)

The proposed project would not include buildings or other structures that would alter wind on the newly renovated project site, nor on surrounding development. The proposed light standards and additional bleachers would not be of sufficient bulk to create substantial ground-level wind acceleration. Therefore, the project would not result in significant effects related to wind.

Impact WS-2: The proposed project would not create new shadow in a manner that could substantially affect outdoor recreation facilities or other public areas. (Less than Significant)

Section 295 of the *Planning Code* was adopted in response to Proposition K (passed November 1984) in order to protect certain public open spaces from shadowing by new structures during the period between one hour after sunrise and one hour before sunset, year round. Section 295 restricts new shadow upon public spaces under the jurisdiction of the Recreation and Park Department by any structure exceeding 40 feet unless the Planning Commission finds the impact to be insignificant. Section 295 does not apply to structures within a park, used for recreational and park-related purposes. The proposed project would not include buildings or other structures that would cast substantial shadows on surrounding buildings or park property. The proposed light standards would be greater than 40 feet tall but would not be of sufficient bulk to cast substantial shadow. Therefore, no shadow effects would ensue as a result of the proposed project.

Impact WS-3: The proposed project, in combination with other past, present, or reasonably foreseeable future projects, would not result in significant cumulative wind and shadow impacts. (Less than Significant)

The proposed project would not contribute to any cumulative significant wind or shadow impacts. No other projects are proposed in the vicinity that would alter wind or shadow conditions.

<i>Topics:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
10. RECREATION—Would the project:					
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Physically degrade existing recreational resources?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The proposed project would result in the renovation of the existing athletic fields and thus, construction of project facilities is considered construction of recreational facilities. Therefore, analysis of the construction or expansion of recreational facilities as it relates to the project is the subject of this Initial Study, since the primary purpose of this Initial Study is to evaluate the potential impacts of implementing this project. Project construction was described and analyzed throughout this document. Therefore, criterion b) is not discussed in Section 10, Recreation.

Impact RE-1: The project would not increase the use of existing neighborhood parks and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated and would not result in physical degradation of recreational resources. (Less than Significant)

The proposed project would renovate the existing athletic facility to increase the amount of playable time and subsequently the use of this recreational facility. Currently, the playfields are able to accommodate approximately 1,796 hours of annual play for soccer or 3,580 hours for baseball/softball. Installation of synthetic turf would allow for use in wet weather conditions and

installation of lighting would allow for longer evening use of the fields. Upon completion of the renovation, the field could be utilized as two full-size soccer fields or a full-size soccer field and a baseball field. With implementation of the proposed project, it is anticipated that approximately 5,366 new hours of ground sports play, or 3,570 additional hours of baseball/softball play would be available. Total hours at project completion would be approximately 7,162 hours of ground sports play, or 7,150 hours of baseball/softball play. The existing grass fields are in poor condition; the renovation of the athletic fields with lights and synthetic turf would not only increase the amount of playable time, but would also increase the safety, performance, and accessibility of the fields.

The fields would be closed to the public during project construction, which is expected to occur over an eight-month period. It is expected that the overall SFRPD system would accommodate some of the field use currently occurring at these athletic fields. Because the number of reservations at other SFRPD fields would continue to be controlled during the project construction period, other SFRPD fields would not experience an unusual amount of overuse resulting in additional physical deterioration of the facilities. Further, sufficient recreation opportunities are available through other San Francisco recreation resources such that much of the open play and other recreational activities currently occurring at the project site could be accommodated for the eight-month construction period without over use of those facilities and related potential for physical deterioration of those facilities. At any rate, the less than one year of construction could have temporary impacts with respect to field use and availability, but would not be expected to result in any permanent adverse changes.

Following project construction, the existing recreation opportunities available at the athletic facility would resume (including use of the fields by reservation and open play and other recreation activities). However, the available play time would increase as the synthetic turf does not need time to rest or re-grow and does not degrade as quickly as grass as a result of heavy use. Because the proposed synthetic turf requires less maintenance than the existing grass turf fields, which are currently in poor condition, the increased play time could be accommodated and the facility maintained in good condition with one full time equivalent staff without resulting in physical deterioration of the facility.

Therefore, the project would result in less than significant recreation impacts.

Impact RE-2: The proposed project, in combination with other past, present, or reasonably foreseeable future projects, would not result in significant cumulative recreation impacts. (Less than Significant)

The Minnie and Lovie Ward playfields would be closed to the public during project construction, which is expected to occur over an eight-month period beginning in fall 2012. The proposed renovation of the SFRPD’s Beach Chalet Athletic Fields (EP Case No. 2010.0016E) would also result in closure of those playfields during its construction period. Renovation of the Beach Chalet playfields is expected to begin in summer/fall 2013. Therefore, the construction periods of the Minnie and Lovie Ward and Beach Chalet projects would most likely not overlap.

In addition, it is expected that the overall SFRPD system would accommodate some of the field use currently occurring at these two athletic fields. Because the number of reservations at other SFRPD fields would continue to be controlled during project construction periods, other SFRPD fields would not experience an unusual amount of overuse resulting in additional physical deterioration of the facilities. The proposed project would not contribute to any cumulative significant recreation impacts.

<i>Topics:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
11. UTILITIES AND SERVICE SYSTEMS—					
Would the project:					
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Have sufficient water supply available to serve the project from existing entitlements and resources, or require new or expanded water supply resources or entitlements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<i>Topics:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
e) Result in a determination by the wastewater treatment provider that would serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Impact UT-1: Implementation of the proposed project would not exceed wastewater treatment requirements, exceed the capacity of the wastewater treatment provider serving the project, or result in the construction of new wastewater treatment facilities. (Less than Significant)

The project proposes the renovation of the Minnie and Lovie Ward Athletic Fields facility, including the conversion of existing grass athletic fields to synthetic turf. The number of visitors using the athletic field facilities would increase after implementation of the proposed project. This increase could result in an increase in the volume of wastewater generated at the on-site restroom facilities. However, the anticipated increase in volume would not require expansion of wastewater treatment facilities or an extension of a sewer trunk line as the project site is currently served by existing facilities. Therefore, impacts to wastewater treatment facilities would be less than significant.

Impact UT-2: Implementation of the proposed project would not require new water provision facilities or require new water entitlements to serve the project. (Less than Significant)

The project proposes the renovation of the Minnie and Lovie Ward Athletic Fields facility, including the conversion of existing grass fields to synthetic turf. The new synthetic surface requires no irrigation and implementation of the proposed project would reduce current water use. Therefore, the proposed improvements would not substantially increase the existing demand for water consumption, and the proposed project would not have a significant effect on water supply.

Impact UT-3: The proposed project would not require new stormwater drainage facilities, the construction of which could result in significant environmental effects. (Less than Significant)

The proposed project involves the conversion of an existing grass playfield to synthetic turf. The SFRPD would install an underdrain system beneath the synthetic turf that would be connected to CCSF's combined storm drain system with likely connection points beneath Lobos Street. Specific connection points have not yet been determined and could require excavation to tie-in the proposed underdrain system with the City's storm drainage infrastructure. Rainwater that falls on the pervious turf field surface would infiltrate into the underdrain system, and then would be conveyed to the combined sewer system for treatment at the Southeast Water Pollution Control Plant. SFRPD is currently coordinating with San Francisco Public Utilities Commission (SFPUC) staff to ensure that the proposed site drainage system complies with appropriate CCSF, State, and federal regulations.

The existing stormwater drainage facilities would be adequate to accommodate the site's drainage, and implementation of the proposed project would not require the construction of new stormwater drainage facilities or expansion of existing facilities. Given that CCSF uses a combined stormwater and sanitary sewer system, an increased volume of stormwater discharge could impact the capacity of the wastewater treatment facility. However, as discussed in Section E.15, Hydrology and Water Quality, CCSF's combined sewer system has sufficient capacity to accommodate additional stormwater flows from the proposed project. Therefore, impacts to stormwater drainage facilities would be less than significant.

Impact UT-4: The proposed project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs. (Less than Significant)

The project proposes the renovation of the Minnie and Lovie Ward Athletic Fields facility, including the conversion of grass turf playing fields with synthetic turf. Synthetic turf has a warranty of eight years and the project sponsor anticipates that the life expectancy of these fields would be between ten and twelve years based on research at other similar installations. Through the Department of the Environment, an end-of-life recycling program for synthetic turf, which includes stringent purchasing standards and recommends purchasing turf from companies that use recycled content, is in place for synthetic turf purchases. San Francisco's solid waste, following the sorting of recyclable materials at the Recology transfer station near Candlestick

Park, is disposed of at the Altamont Landfill in Alameda County and is required to meet federal, state, and local solid waste regulations. With waste diversion and expansions that have occurred at the Altamont Landfill, there is adequate capacity to accommodate San Francisco's solid waste. However, the amount of solid waste that San Francisco can deposit at Altamont Landfill is governed by the City's agreement with the landfill operator, and the City is anticipated to reach its current limit between 2013 and 2015. On July 26, 2011, the Board of Supervisors adopted Resolution No. 322-11, which designates the Ostrom Road Landfill (Yuba County) as the future disposal site of all solid waste collected in the City until 2025, or until 5 million tons have been deposited. The total permitted capacity of the landfill is approximately 41 million cubic yards with an estimated closure date of 2066.³² Given the nature of the proposed improvements, which do not include residential or commercial uses, the proposed project would not substantially increase solid waste volumes and impacts from solid waste generation or impacts on solid waste facilities would be less than significant.

Impact UT-5: The construction and operation of the proposed project would follow all applicable statutes and regulations related to solid waste. (Less than Significant)

The California Integrated Waste Management Act of 1989 (AB 939) requires municipalities to adopt an Integrated Waste Management Plan (IWMP) to establish objectives, policies, and programs relative to waste disposal, management, source reduction, and recycling. San Francisco Ordinance No. 27-06 requires a minimum of 65 percent of all construction and demolition debris to be recycled and diverted from landfills. Furthermore, the project would be required to comply with City's Ordinance 100-09, the Mandatory Recycling and Composting Ordinance, which requires everyone in San Francisco to separate their refuse into recyclables, compostables, and trash.

The project would be expected to participate in the City's recycling and composting programs and other efforts to reduce the solid waste disposal stream. The Ostrom Road Landfill is expected to remain the disposal site for the City until 2025, or until 5 million tons have been deposited. Given the existing and anticipated increase in solid waste recycling and the capacity of the Ostrom Road Landfill, and the fact that no residential or commercial uses are proposed, the impacts on solid waste facilities from the project would be less than significant.

³² Recology, Ostrom Road, <http://www.recologyostromroad.com/>, accessed August 18, 2011.

Impact UT-6: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would have a less-than-significant impact on utilities and service systems. (Less than Significant)

Given that existing service management plans address anticipated growth in the region and the nature of the proposed project, which does not include residential or commercial uses, the proposed project’s effects related to utilities and service systems, both individually and cumulatively, are considered less than significant.

<i>Topics:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
12. PUBLIC SERVICES —Would the project:					
a) Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any public services such as fire protection, police protection, schools, parks, or other services?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Impact PS-1: The proposed project would increase demand for police protection and fire protection, but not to an extent that would require new or physically altered governmental facilities, the construction of which could cause significant environmental impacts. (Less than Significant)

The project site currently receives emergency services from the San Francisco Fire Department (SFFD), Station 33 at 8 Capitol Avenue, which is approximately four blocks south of the project site, and the San Francisco Police Department (SFPD), Taraval Station at 2345 24th Avenue, which is approximately 2.3 miles northwest of the project site. No new fire or police stations are proposed in the project vicinity. The proposed project would renovate the existing athletic facility and thus would not construct any habitable structures or permanently increase population. While the project would result in increased utilization of the Minnie and Lovie Ward recreational facilities, the anticipated increased intensity of use is not expected to substantially increase the service calls to either the SFPD or the SFFD; increase crime prevention activities; or require additional policing of the project area. Therefore, construction of the project would not

necessitate additional fire protection or police protection facilities. Overall, the project would have less-than-significant impacts on police and fire protection services.

Impact PS-2: The proposed project would not increase the population of school-aged children and would not require new or physically altered school facilities. (No Impact)

The San Francisco Unified School District (SFUSD) provides school services to the project area. The proposed project would renovate an existing athletic facility and would not construct any habitable structures, or permanently increase population in the project vicinity. Therefore, the proposed project would not increase the population of school-aged children residing in the project vicinity, and the project would have no impact on schools.

Impact PS-3: The proposed project would increase demand for recreational services, but not to the extent that would result in significant environmental impacts. (Less than Significant)

The proposed project is designed for the purpose of improving the quality of recreational facilities and increasing access. Consequently, the proposed project would result in an increased demand in recreational services. The athletic fields are currently available for 1,796 hours of annual soccer or other ground sports play, or 3,580 hours for baseball/softball. After implementation of the proposed project, it is anticipated that the fields would be available for approximately 7,162 hours of soccer or other ground sports play, or 7,150 hours of baseball/softball play. The potential environmental impacts resulting from the proposed project are the subject of this Initial Study and all have been found to be less than significant. Therefore, impacts resulting from increased demand from recreational services would be less than significant.

The total area of the new synthetic turf fields would be approximately 267,000 square feet in size. The loss of the natural turf playfields (about 6.1 acres) would represent a loss of grassy areas used for athletic activities. However, there are similar open grassy areas near the project area. There are four large golf courses located west of the project site, and there are many small playing fields similar to the project site in size within two miles of the project site such as Balboa Park and Aptos Playground. In addition, larger city parks, such as Golden Gate Park and John McLaren Park, also contain hundreds of acres of grass.

Impact PS-4: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would have a less-than-significant impact on public services. (Less than Significant)

For the reasons discussed above, the proposed project’s effects related to public services, both individually and cumulatively, are considered less than significant.

<u>Topics:</u>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
13. BIOLOGICAL RESOURCES—					
Would the project:					
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Impact BI-1: The proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on any special status species. (Less than Significant with Mitigation)

A number of special-status³³ plant and wildlife species are present in the greater San Francisco peninsula, despite extensive urban development over the last century and a half. Remaining populations of these species are highly fragmented, typically occupying habitats in limited open space areas within San Francisco and its surrounding cities. The project site does contain vegetated habitats capable of supporting several special-status species tolerant of disturbance, but it has been heavily disturbed and provides little potential habitat for most special-status species present on the San Francisco peninsula. A reconnaissance site visit was conducted by ESA on July 14, 2011, to document vegetation present, site conditions, and any wildlife foraging or breeding in the vicinity of the project site. Habitats at the project site are described below.

The largest vegetated habitat present is the turf grass field itself, which is approximately 6.1 acres in size. This area consists of irrigated, regularly mowed and maintained turf grass used as athletic fields. Turf grass species used on the athletic fields include fescue (*Festuca* sp.) and blue grass (*Poa* sp.), as well as other cultivated grass species. Weedy non-native plant species, such as English lawn daisy (*Bellis perennis*), pineapple weed (*Matricaria matricarioides*), and panic veldt grass (*Ehrharta erecta*) are also locally common on turf grass fields. No birds were observed foraging over turf grass areas during ESA's site visit, but typical species in this area include house finch (*Carpodacus mexicanus*), Brewer's blackbird (*Euphagus cyanocephalus*), house sparrow (*Passer domesticus*), and black phoebe (*Sayornis nigricans*). Human and domestic dog disturbance may prevent birds from foraging on or nearby the fields. Pocket gopher (*Thomomys* sp.) burrows were also present, which provide at least a moderate prey base for foraging raptors, including red-tailed hawk (*Buteo jamaicensis*) and red-shouldered hawk (*Buteo lineatus*).

Large Monterey cypress (*Cupressus macrocarpa*) and Monterey pine (*Pinus radiata*) trees border the southwest and the northeast corner of the playing field, while smaller landscape trees, such as holly oak (*Quercus ilex*), Catalina ironwood (*Lyonothamnus floribundus*), Sydney golden wattle (*Acacia longifolia*), and coast live oak (*Quercus agrifolia*) are present in the southeast corner. A tree

³³ The term "special-status" species includes those species that are listed and receive specific protection defined in federal or state endangered species legislation, as well as species not formally listed as Threatened or Endangered, but designated as "Rare" or "Sensitive" on the basis of adopted policies and expertise of state resource agencies or organizations, or local agencies such as counties, cities, and special districts. Also included are California Species of Special Concern. A principle source for designation in this analysis as a special-status species is the California "Special Animals List."

survey was conducted in January 2011, which determined that the majority of trees at the project site are healthy and recommended they be retained.³⁴ No nests were observed in July 2011 in any trees within the project site, but one red-shouldered hawk was observed flying between Monterey cypress trees during the ESA site visit, and was being harassed by house finches and an American crow (*Corvus brachyrhynchos*). Large trees surrounding the playing field are capable of supporting nesting red-tailed hawks and red-shouldered hawks, which are both considered special-status species due to protection under California Fish and Game (CDFG) Code Section 3503.5.³⁵ Larger trees at the project site could also support roosting bats such as the Mexican free-tailed bat (*Tadarida brasiliensis*) and the special-status western red bat (*Lasirurs blossewillii*), especially those with densely vegetated branches.

A query of CDFG's California Natural Diversity Database reports 74 special-status plant and animal species in the San Francisco North and San Francisco South USGS 7.5-minute quadrangles.³⁶ None of the special-status plant species recorded in the area are presumed to occur in the project site, and no special-status plant species were observed during the July 2011 site visit; the overall potential of the site to support special-status plant species is considered low based on the lack of native plant habitats and the disturbed and heavily managed condition of the area. Special-status wildlife potentially occurring on the project site include red-tailed hawk, red-shouldered hawk, American kestrel (*Falco sparverius*), and western red bat. These species are described in greater detail below.

Birds of prey. The red-tailed hawk, red-shouldered hawk, and American kestrel are relatively common raptor species that nest in trees but require nearby open areas for foraging. All three species feed on small mammals, snakes, lizards, small birds, and invertebrates, but red-tailed hawks take relatively large prey due to their size, while American kestrels hunt for smaller prey. Both red-tailed and red-shouldered hawks construct large stick nests in sturdy branches of tall mature trees, while American kestrels nest in cavities, typically in trees but also in artificial cracks or holes in

³⁴ Hort Science, Tree Assessment: Minnie & Lovie Ward Recreation Center, 2011. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2011.0148E

³⁵ The inclusion of birds protected by Fish & Game Code Section 3503.5 is in recognition of the fact that these birds are substantially less common in California than most other birds, having lost much of their habitat to development, and the recognition that the populations of these species are therefore substantially more vulnerable to further loss of habitat and to interference with nesting and breeding than are most other birds. It is noted that a number of raptors and owls are already specifically listed as threatened or endangered by state and federal wildlife authorities.

³⁶ California Department of Fish and Game (CDFG), California Natural Diversity Database (CNDDDB) version 3.1.0, data request for the San Francisco North and San Francisco South U.S. Geological Survey 7.5-minute topographic quadrangles, commercial version, expires 01/02/2012, retrieved 7/27/2011.

structures or buildings. The San Francisco Breeding Bird Atlas (SFBBA) has documented breeding for all three species in parks within the City of San Francisco.³⁷ While habitats in large, contiguous parks like the Presidio or Golden Gate Park may have lower disturbance and more available habitat, during ESA's July site visit to the project site, a red-shouldered hawk was observed flying between large Monterey cypress trees, indicating a moderate potential that raptor species could nest in trees in the vicinity of the project site. All three raptor species are protected under Section 3503.5 of the California Fish and Game Code.

Western red bat. The western red bat is a mostly solitary species, roosting in the foliage of trees adjacent to streams, open fields, orchards and urban areas during the day. Surveys for bats have been conducted in San Francisco, focusing on natural areas and parks. Findings were that the most commonly encountered special-status species in the area was the western red bat, a California species of concern. The surveys show that western red bat is much less abundant than several other common species in the area, and is generally restricted to parks with lakes.³⁸ Knowing that these bats do occur in natural areas of the city, it is noted that while the project site provides potential roosting habitat for the western red bat, the lack of any large water bodies in or adjacent to the project site reduces the likelihood that they would occur there. While designation of the western red bat as a species of concern by CDFG does not afford any specific protection, this designation renders the western red bat a special-status species for the purpose of this document, and thus adverse effects to this special would be considered significant.

The proposed project would result in the replacement of approximately 6.1 acres of mowed turfgrass with synthetic turf. This would remove approximately 6.1 acres of habitat for rodents, such as gophers and voles, and a variety of insects and other invertebrates, which are typical prey for both special-status and common wildlife, including hawks and other birds, bats, as well as other urban mammals, such as raccoons (*Procyon lotor*) and opossum (*Didelphis virginiana*). The loss of foraging habitat (and prey) for raptors and other birds protected under the California Fish and Game Code, as well as for special-status bats, could be considered significant; however, four large golf courses are located west of the project site, and many small playing fields similar to the project site in size and habitat are present within two miles of the project site. Larger city parks,

³⁷ San Francisco Field Ornithologists, *San Francisco Breeding Bird Atlas, 2001–2003*, available online at: <http://www.sffo.org>, accessed on July 26, 2010.

³⁸ Krauel, J.K. 2009. Foraging Ecology of Bats in San Francisco. M.S. Thesis, San Francisco State. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2010.0016E.

such as Golden Gate Park and John McLaren Park, also contain hundreds of acres of turf grass habitat. This loss is not considered substantial in either the local or regional context and is not expected to affect raptors and special-status bats in any significant way.

Implementation of the proposed project may result in the removal of 21 trees, and the loss of an active nest during tree removal would be considered a significant impact under CEQA if that nest were occupied by a special-status bird species. Moreover, disruption of nesting migratory or native birds is not permitted under the federal Migratory Bird Treaty Act (MBTA) or the California Fish and Game Code. Thus, the loss of any active nest (i.e., removing a tree or shrub or demolishing a building containing a nest) must be avoided under federal and State law.

To reduce potential for effects on nesting birds, SFRPD shall conduct tree removal and pruning activities, as well as other construction activities, outside the bird nesting season (January 15 to August 15) to the extent feasible. If construction during bird nesting season cannot be fully avoided, preconstruction nesting surveys will be conducted by a qualified wildlife biologist prior to work in order to comply with the MBTA and the California Fish and Game Code. SFRPD shall conduct preconstruction bird nesting surveys within seven days of the start of construction (i.e. active ground disturbance or vegetation removal). If active nests are located during the preconstruction bird nesting survey, SFRPD will contact the California Department of Fish and Game for guidance on avoiding take. Such guidance may include setting up and maintaining a line-of-sight buffer area around the active nest and prohibiting construction activities within the buffer; modifying construction activities; and/or removing or relocating active nests. In addition, SFRPD has adopted a Pre-Work Bird Survey Policy as part of SFRPD's Urban Forestry tree policy. This policy is in accordance with the California Fish and Game Code and the MBTA prohibits a wide range of activities that might adversely affect birds, including destruction and general disturbance of active nests. Thus, direct mortality of special-status and otherwise protected birds through vegetation removal activities would be less than significant.

However, direct mortality of special-status bats through vegetation removal would also be considered potentially significant. To avoid direct impacts to special-status bats that may use trees on the project site for roosting purposes during construction activities, the City and County of San Francisco shall implement the following mitigation measure:

Mitigation Measure BI-1: Pre-Construction Bat Surveys

Conditions of approval for building and grading permits issued for demolition and construction within the project site shall include a requirement for pre-construction special-status bat surveys when large trees are to be removed. If active day or night roosts are found, the bat biologist shall take actions to make such roosts unsuitable habitat prior to tree removal or building demolition. A no-disturbance buffer of 100 feet shall be created around active bat roosts being used for maternity or hibernation purposes. Bat roosts initiated during construction are presumed to be unaffected, and no buffer would be necessary.

With implementation of **Mitigation Measure BI-1**, to conduct pre-construction surveys for special-status bats prior to project construction, direct impacts on special-status bats, would be less than significant.

Impact BI-2: The proposed project would not impact any sensitive natural communities or adversely affect any federally-protected wetlands. (No Impact)

Historically, areas surrounding the project site were drained by a small creek running westward into Lake Merced, a freshwater lake separated from the ocean by sand dunes. Currently, the project site is in the center of a dense urban community, and surface water enters the storm drainage network and runs westward to Lake Merced. If wetlands were historically present at the project site, they have since been removed and developed. No other sensitive natural communities are present on the project site.

Impact BI-3: The proposed project would not interfere with the movement of native resident or wildlife species or with established native resident or migratory wildlife corridors. (Less than Significant)

Given that the wildlife species using the proposed project site are primarily birds, removal of habitat (i.e. conversion of turfgrass to synthetic turf and removal of trees and shrubs) is not expected to result in substantial impacts on any migratory wildlife corridor nor would construction of the proposed project result in a barrier to wildlife movement. The proposed project would result in the introduction of nighttime lighting directly on the playfields, which are currently not lighted at night. There are, though, existing sources of lighting within the park, including four light standards that illuminate the tennis and basketball courts at the northeastern

corner of the park, and multiple shorter light standards along the path leading from Capitol Avenue to the recreation center.

Although lighting proposed by the project would appear brighter compared to existing conditions, the project site is in an urban neighborhood with existing street lighting and other light sources. The proposed project would also result in an overall increase in ambient noise levels associated with athletic field use, since field use would be extended throughout the year and into the night as compared with the baseline conditions, where the fields are only used seasonally and during daylight hours. Increases in ambient noise levels have the potential to interfere with avian reproduction in the vicinity of the athletic fields, as well as, to deter use of adjacent habitat by special-status bats.

Nighttime Lighting and Migratory Birds

The project site is within the Pacific Flyway along with much of the greater San Francisco Bay Area, within three miles of the Pacific Ocean. While exact migratory corridors through the area are unknown and vary by species, birds typically follow coastlines, rivers, and mountain ranges in their migratory passages from wintering to breeding grounds and back again. The project site provides very limited foraging and roosting habitat for migratory species, but migrating birds likely fly over the athletic fields.

Birds can become “trapped” by a light source and, disoriented, continue to fly around the source until they become exhausted and drop to the ground, where they may be killed by predators³⁹ or die from stress or exhaustion.^{40,41} Light attraction in birds is positively related to light intensity, and studies have shown that reduction in lighting intensity and changing fixed lighting to a flashing or intermittent light system can dramatically reduce avian mortality at lighted structures.⁴² At least one controlled experiment has shown avian mortality can be dramatically reduced through shielding upward radiance of lighting fixtures. In an experiment with fledgling

³⁹ Ogden, L.E., 1996, Op. Cit.

⁴⁰ Weir, R.D., 1976, Annotated bibliography of bird-kills at man-made obstacles: a review of the state of the art and solutions, Department of Fisheries and the Environment, Canadian Wildlife Service, Ontario Region. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2010.0016E.

⁴¹ Reed, J.R., Sincock, J.L., and J.P. Hailman, 1985, Light Attraction in Endangered Procellariiform Birds: Reduction by Shielding Upward Radiation, *The Auk* 102: 377–383. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2010.0016E.

⁴² Jones, J., Francis, C.M., 2003, The effects of light characteristics on avian mortality at lighthouses, *J. Avian Biology* 34: 328–333. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2010.0016E.

seabirds in Hawaii, shielding the upward radiation of lights resulted in a 40 percent reduction in attraction to lights as the fledglings made their way from their nesting colonies to the sea.⁴³ Furthermore, during the study the sides of large buildings and the grounds remained fully lit by the shielded lights, suggesting that birds are not attracted to lighted areas per se but, rather to point-sources of light, which may be related to the use of stars and the moon as navigational aids.⁴⁴ Although the project site is located within the Pacific Flyway and in close proximity to the Pacific Ocean shoreline, migratory corridors in the vicinity of the project site are unknown. It can be assumed, however, that numerous birds pass overhead or in the project vicinity during spring and fall migrations. Given the typical altitude at which migrating birds fly, the fact that the proposed athletic field lights would be shielded, and studies that suggest night-flying birds are attracted to point-sources of light, rather than larger illuminated areas, it is unlikely that the lighting associated with the proposed project would interfere with a migratory corridor or provide a hazard for migratory birds through the phenomenon of light “entrapment.” Although this impact is less than significant without mitigation, **Improvement Measure IM-BI-3** (detailed below) is recommended to further minimize impacts on migratory birds.

Nighttime Lighting and Breeding Birds

Nighttime lighting along roads has been shown to disrupt breeding behavior in birds.⁴⁵ Molenaar et al. also cite numerous other effects on birds that could have potential impacts on reproductive success, such as disruption of circadian and circannual rhythms. Numerous studies have shown that artificially increasing day length induces hormonal, physiological, morphological, and behavioral changes related to reproduction. For example, Lofts and Merton⁴⁶ found that wild bird species could be brought into premature breeding condition by experimental exposure to artificially short nights in winter. Artificial lighting may extend foraging time, a beneficial effect that could increase reproductive fitness, but at the same time may increase the risk of intraspecific competition, individual predation, and increased predation on eggs and nestlings.⁴⁷

⁴³ Reed et al., Op. Cit.

⁴⁴ *Ibid.*

⁴⁵ Molenaar, J.G., Sanders, M.E., Jonkers, D.A., 2006, Road lighting and grassland birds, In: Rich, C. and Longcore, T., Ecological Consequences of Night Lighting, Island Press, Covelo, CA, pp. 67–93. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2010.0016E.

⁴⁶ Lofts, C., Merton, D., 1968, Photoperiodic and physiological adaptations regulating avian breeding cycles and their ecological significance, J. of the Zoological Society of London, 155: 327–394. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2010.0016E.

⁴⁷ Molenaar et al., Op. Cit.

The introduction of nighttime lighting at the project site may deter some birds from using habitat directly surrounding the fields for breeding purposes. Light spill-off from the fields, however, would be minimal, as is discussed in Section 2, Aesthetics. However, if birds are deterred, it would be difficult to separate out the effects of nighttime lighting from increases in ambient noise (see discussion below) and human activity as the potential cause. The breeding bird population in the immediate area that would potentially be affected by nighttime lighting is unknown at this point, with respect to both species and numbers, but is presumed to be relatively small based on available habitat and current disturbance levels. No nests were observed during a July 2011 reconnaissance survey in the trees and shrubs immediately adjacent to the athletic fields. Birds that typically nest in urban environments, where street lights and busy roads also create bright night lighting, would likely not be deterred at all. Those that are deterred have abundant habitat available to them in trees of local parks, as well as large natural areas of San Francisco such as Golden Gate Park and John McLaren Park. **Improvement Measure IM-BI-3** (detailed below) is recommended to further minimize impacts on breeding birds.

Effects of Nighttime Lighting on Special-status Bats

Similar to birds, bats may be deterred from roosting in trees and shrubs immediately adjacent to the renovated athletic fields by the addition of nighttime lighting, but it would be difficult to separate effects of nighttime lighting from the overall increase in ambient noise and human activity that would also occur at the site. The addition of nighttime lighting has potential benefits for bats in that it typically attracts more moths and other flying insects than might normally be present. However, some bat species may be more comfortable foraging in well-lighted areas than others, and this could lead to potential changes in the composition of local bat populations. Due to the relatively low potential for special-status bats to use the existing habitat at the athletic fields in large numbers, the introduction of nighttime lighting is not expected to substantially affect special-status bats or local bat populations in general. Although this impact is less than significant without mitigation, **Improvement Measure IM-BI-3** is recommended to further minimize impacts on special-status bats.

Improvement Measure IM-BI-3: Nighttime Lighting Minimization

In compliance with the voluntary San Francisco Lights Out Program and the Standards for Bird-Safe Buildings, the following bird-safe facility construction and operations measures could be implemented to prevent and minimize the impacts of nighttime lighting on birds, bats, and other wildlife:

- Actively manage field lights so that they are on only when needed and are otherwise turned off, *or* utilize automatic controls (motion sensors, photo-sensors, etc.) to shut off lights in the evening when no one is present.
- Fully shield all lights to prevent upward and outward radiation.
- Focus lights specifically on areas needing illumination.
- Use lights of an intensity no higher than necessary.
- Use flat glass and ultra-low profile light fittings.
- Tightly seal lamp housings and locate them away from structures that may trap insects.

Effects of Increases in Ambient Noise on Wildlife

Noise pollution can be detrimental to wildlife, and bird populations are particularly susceptible because they rely on acoustic signals for mating, predator evasion, and communication between adults and offspring, among other behaviors. Reijnen and Foppen⁴⁸ showed that male willow warblers (*Phylloscopus trochilus*) experience difficulties in mate attraction near highways, as a result of noise pollution. Ellis⁴⁹ describes studies that show “noticeably alarmed” responses in raptors to sounds within the 82–114 A-weighted decibel (dBA) range.⁵⁰ Jehl and Cooper⁵¹ found that seabirds flushed off their nests at 72–89 dBA. More recent research has found certain types of unnatural noise to be disruptive to bird life at a much lower level; Delaney et al.⁵² found that spotted owl flush rates in response to chain saws were apparent at levels above 46 dBA. Finally, West et al.⁵³ found that chronic intense noise (e.g., oil field compressor station) of 92 dBA or more may induce physiological stress in some bird species, if they cannot avoid exposure. None of these studies were able to conclude that nest failure resulted from higher noise levels. Nevertheless, a single stimulus event clearly had an effect on bird behavior, and the studies suggest that short-term loud noises can affect foraging and roosting birds by temporarily disturbing these behaviors, and may deter bird

⁴⁸ Reijnen, R., Foppen, R., The effects of car traffic on breeding bird populations in woodland. *Journal of Applied Ecology*, 32, pp. 85-94 and 481-491, 1995. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2001.0016E.

⁴⁹ Ellis, D.H., C.H. Ellis, and D.P. Mindell, Raptor Responses to Low-Level Jet Aircraft and Sonic Booms, *Environmental Pollution* 74:53-83, 1981. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2001.0016E.

⁵⁰ Ibid.

⁵¹ Jehl, J.R., and C.F. Cooper, eds., Potential Effects of Space Shuttle Booms on the Biota and Geology of the California Channel Islands: Research Reports. Center for Marine Studies, San Diego State University, San Diego, CA, Tech. Rep. 80-1. 246 pp.,1980. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2010.0016E.

⁵² Delaney, D.K., T.G. Grubb, P. Beier, L.L. Pater, and M.H. Reiser, Effects of Helicopter Noise on Mexican Spotted Owls, *Journal of Wildlife Management* 63:60-76, published 1999. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2010.0016E.

⁵³ West EW, Dooling RJ, Popper AN, and Buehler DM, Noise Impacts on Birds: Assessing Take of Endangered Species, *The Journal of the Acoustical Society of America*, 122(5): 3082, 2007 Nov. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2010.0016E.

use of an area (including nesting) if such noises persist over the long term. However, Dooling and Popper⁵⁴ report that several studies show that birds adapt quite well, and even sometimes prefer, noisy environments with high levels of traffic noise. Furthermore, humans have more sensitive hearing than birds. For example, distant traffic noises in a natural setting that are barely audible to humans, are certainly inaudible to birds and would have no effect on any aspect of their acoustic behavior.⁵⁵ In addition, birds are much more resistant to hearing loss and auditory damage from acoustic over-exposure than are humans and other mammals.⁵⁶

Birds in the study area are accustomed to varying levels of ambient noise emanating from existing human activities and traffic in the area. Under existing conditions, noise varies seasonally as the playing fields are used more frequently in spring and fall. The highest use levels, and consequently, highest noise levels associated with human activities, already occur during the avian breeding season, which is when birds would be most sensitive. Noise typically generated at athletic fields during events can range from 72 dBA to 86 dBA, depending on the number of spectators.⁵⁷ These readings suggest that the roar of an excited crowd at an athletic event at the project site could generate a loud enough noise to cause birds to flush from perches in the immediate vicinity of the fields. However, while increased noise levels could potentially deter the general use of the project site by migratory birds for wintering, foraging, or roosting purposes, similar habitat is present west of the project site around Lake Merced as well as in Golden Gate Park and the John McLaren Park. In addition, because the highest levels of noise and activity at the fields already occur during the avian breeding season, the proposed project is not expected to have a substantial effect over baseline conditions on avian reproduction in the project site.

Impact BI-4: Implementation of the proposed project would not conflict with local tree protection regulations. (Less than Significant)

The project site includes approximately 59 trees representing 9 species. HortScience, Inc. evaluated the existing trees in order to determine the health and structural conditions of the

⁵⁴ Dooling, Robert J., and Arthur N. Popper. The Effects of Highway Noise on Birds, prepared for California Department of Transportation, September 30, 2007, available online at: http://www.dot.ca.gov/hq/env/bio/files/caltrans_birds_10-7-2007b.pdf, accessed on April 18, 2011.

⁵⁵ Dooling and Popper, Op. Cit.

⁵⁶ *Ibid.*

⁵⁷ Albany Unified School District, Recirculation of the Draft Environmental Impact Report for the Albany High School Cougar Fields Improvement Project, State Clearing House No. 2006042124, April 2007.

trees, as well as the potential risks to park users and property from tree failure.⁵⁸ Although tree removal is being proposed concurrently with the athletic field renovation, the field renovation itself would not necessitate tree removal. The suitability for tree preservation conducted by HortScience considered the following factors in its evaluation: health, structural integrity, species response, age and longevity, and species invasiveness. Thirty-two trees were rated as having poor suitability for preservation. The tree risk assessment included three components: 1) potential to fail; 2) environment that may contribute to failure; and 3) presence of persons or objects that could be injured or damaged. Points were assigned to each component (up to 4 points per component) and then combined to obtain an overall hazard rating for each tree. Risk rankings of the surveyed trees ranged from “3” to “9.” Based on the assessment of tree conditions and risk, and review of the proposed project, HortScience recommended removal of 21 trees. Of the 21 trees proposed for removal, 5 had a risk rating of “9;” 13 were in poor condition and had poor suitability for preservation; 2 had poor suitability; and 1 was dead. The majority of the trees that would be removed are located near the western entrance to the park and at the northeast corner of the field, near the tennis courts.

All trees proposed for removal are within park property, which is considered “private property” for the San Francisco Department of Public Works (DPW).⁵⁹ DPW does not classify any trees as “protected” if they are not on public property or within 10 feet of the public right-of-way; therefore, no trees proposed for removal are subject to San Francisco’s Urban Forestry Ordinance. The proposed project includes replacement of each tree removed at a one-to-one or greater ratio. Specific tree replacement locations would be determined by the SFRPD Urban Forestry supervisor and Natural Areas group manager. Tree removal would follow the San Francisco’s Department of Recreation and Park protocol, which requires a 30-day notification of removal posting after nesting bird surveys have been completed. No significant impacts are expected as a result of conflicts with San Francisco tree removal ordinances.

⁵⁸ HortScience, Inc., *Tree Assessment, Minnie and Lovie Ward Recreation Center*, prepared for the San Francisco Recreation and Park Department, January 2011. This document is available for review at 1650 Mission Street, Suite 400, San Francisco, CA in File No. 2010.0148E.

⁵⁹ Mauer, Dan, personal communication with Alisa Moore via Email, July 12, 2011.

Impact BI-5: The project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. (No Impact)

No Habitat Conservation Plans, Natural Community Conservation Plans, or other approved conservation plans have been approved for the project site. As described above, the proposed project would not conflict with any local policies or ordinances protecting biological resources; affect any rare, threatened, or endangered species; diminish habitat; or remove any protected trees. Therefore, the proposed project would not result in any impact to biological resources.

BI-6: The proposed project, in combination with past, present and reasonably foreseeable future projects in the vicinity of the site, would result in less-than-significant cumulative impacts to biological resources. (Less than Significant)

There are no major projects within 1,000 feet of the project site. Cumulative projects in the vicinity of the proposed project consist of limited residential renovation projects and would not be expected to result in loss of biological resources habitat, or include large-scale lighting. The current impact analysis has shown that the project, after mitigation, would result in relatively minor and less-than-significant impacts on biological resources within and in the vicinity of the project site. In terms of habitat loss, the project would result in the loss of approximately 6.1 acres of turfgrass, as well as less than an acre of trees and shrubs within the project area. The combined projects would not result in a cumulative loss of grassland foraging habitat or lighting impacts beyond that described for the project.

<i>Topics:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
14. GEOLOGY AND SOILS – Would the project:					
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:					
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<i>Topics:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Change substantially the topography or any unique geologic or physical features of the site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The proposed project would be connected to the existing sewer system and would not require use of septic systems. Therefore, topic 14e is not applicable.

Impact GE-1: The proposed project would not result in exposure of people and structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, expansive soils, seismic ground-shaking, liquefaction, lateral spreading, or landslides. (Less than Significant)

The project site is located approximately two miles east of the San Andreas fault, the closest Alquist-Priolo designated fault. Consequently, the proposed project is not at risk of surface fault rupture.⁶⁰ The athletic fields are underlain by Orthents soils, cut and fill, 0 to 15 percent slopes and Urban Land-Orthents, cut and fill complex, 5 to 75 percent slopes. Neither of these soils exhibit expansive characteristics.⁶¹ The project site is not located in a Seismic Hazards Zone as delineated by the California Division of Mines and Geology as historically or potentially subject

⁶⁰ California Department of Conservation, Division of Mines and Geology, State of California Special Study Zones, South San Francisco, 1982.

⁶¹ Natural Resource Conservation Department (NRCS), Custom Soil Report for San Mateo County Eastern Part, available online at <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>, accessed on July 26, 2011.

to liquefaction. Lateral spreading of lurching is generally caused by liquefaction of marginally stable soils underlying gentle slopes. Because the site has a very low potential for liquefaction, it was concluded that the potential for lateral spreading is also low. The project site is also not located in a Seismic Hazards Zone for landslides.⁶² As a result, the site has a low potential for landslides and the potential impact is less than significant. Further, based on maps contained in the Community Safety Element of the *San Francisco General Plan*, the project site is not in an area subject to landslide, or liquefaction (Maps 4 and 5 in the Community Safety Element).⁶³ Therefore, there would be less than significant impacts related to surface fault rupture, expansive soils, landslide, lateral spreading or liquefaction.

The Working Group for California Earthquake Probabilities estimates a 63 percent probability of an earthquake of Mw 6.7 or greater occurring on one of the major faults in the Bay Area by 2038.⁶⁴ The Community Safety Element of the *General Plan* contains maps that indicate areas of the city where one or more geologic hazards exist. Maps 2 and 3 in the Community Safety Element of the *General Plan* show the intensity of ground shaking in San Francisco from two of the most probable earthquakes, one of magnitude 7.1 on the San Andreas Fault and one of magnitude 7.1 on the northern segment of the Hayward fault. The project site is in an area subject to strong seismic groundshaking in the event of an earthquake along the Peninsula segment of the San Andreas Fault and moderate seismic groundshaking in the event of an earthquake on the Northern segment of the Hayward fault.⁶⁵

The proposed project would be required to conform to the *San Francisco Building Code*, which ensures the safety of all new construction in the City. Additional background studies could be required for the Project and would be considered as part of the Department of Building Inspection (DBI) review process. Background information provided to DBI would provide for the security and stability of adjoining properties as well as the project site during construction. Therefore, potential damage to structures (including existing adjacent structures) from geologic hazards on the project site would be addressed through the DBI requirement for a geotechnical report and review of the demolition and building permit applications pursuant to its

⁶² California Department of Conservation, Division of Mines and Geology, State of California Seismic Hazard Zones, City and County of San Francisco, November 2000.

⁶³ San Francisco Planning Department, Community Safety Element, *San Francisco General Plan*, April 1997.

⁶⁴ Earthquake probabilities were analyzed by the Working Group for California Earthquake Probabilities, a group assembled by the U.S. Geological Survey, Earthquake Hazards Program. Its analysis is available online for review at <http://earthquake.usgs.gov/regional/nca/ucerf/>.

⁶⁵ Association of Bay Area Governments, Future Earthquake Shaking Scenarios Maps, available online at <http://quake.abag.ca.gov/shaking/>, accessed on July 26, 2011.

implementation of the *Building Code*. Any changes incorporated to meet the *Building Code* standards that are identified as a result of the DBI review process would constitute minor modifications of the project and would not require additional environmental analysis. Consequently, the proposed project would not result in a significant effect related to seismic and geologic hazards.

Impact GE-2: The proposed project would not result in substantial loss of topsoil or erosion. (Less than Significant)

The proposed project would not substantially change the general topography of the site or any unique geologic or physical features of the site. The project site is greater than one acre. Therefore, CCSF would be required to obtain a General Construction National Pollutant Discharge Elimination System (NPDES) permit. As discussed in Impact HY-1, the project sponsor would compose and comply with a Stormwater Pollution Prevention Plan (SWPPP) and associated Best Management Practices (BMPs) as required by the General Construction permit. Implementation of erosion control BMPs, such as use of sandbags, straw bales, soil stabilizers, and avoiding soil disturbance during wet weather, would minimize impacts of erosion during construction. Installation of the pervious, synthetic turf and associated stormwater drainage system would prevent loss of topsoil and erosion in the areas surrounding the field. Implementation of the erosion and sedimentation control BMPs combined with the site design features would minimize short-term construction-related erosion impacts and long-term operational impacts to less-than-significant levels.

Impact GE-3: The proposed project would not result in impacts to site topographical features. (Less than Significant)

The project site is relatively flat and the adjacent hillside is contained by a retaining wall with the upper level, above the fields, containing the recreation center and children's play structures. The athletic fields are surrounded by mostly residential land uses. The retaining wall would be modified but would not alter the general topography of the site. Apart from clearing and grading, the proposed project would not alter the general topography of the project site, or otherwise affect any unique geologic or physical features of the site. The proposed project would have a less than significant impact with respect to topographical features of the site.

Impact GE-4: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would have a less-than-significant impact on geology and soils. (Less than Significant)

For the reasons discussed above, the proposed project’s effects related to geology and soils, both individually and cumulatively, are considered less than significant.

<i>Topics:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
15. HYDROLOGY AND WATER QUALITY – Would the project:					
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion of siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other authoritative flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

<u>Topics:</u>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Impact HY-1: The proposed project would not violate water quality standards, create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, provide an additional source of polluted runoff that would adversely affect water quality, or otherwise substantially degrade water quality. (Less than Significant)

The project area is located at elevations between 325 feet and 400 feet above sea level and drains in a southwesterly direction. The topography at the athletic fields is generally flat. However, it is part of a larger, 2-tiered property which has been contoured to accommodate the sloping and hilly terrain of the surrounding area. Most natural water features in San Francisco were filled during development, and there are no natural surface water bodies or streams within or adjacent to the project area. Lake Merced and the Pacific Ocean, approximately 2.5 miles to the west of the project area, are the only major water features in the vicinity. Average annual precipitation in the San Francisco Bay Area is about 21 inches, which predominantly occurs from November through April. Stormwater runoff and natural stream flow within San Francisco, has been almost entirely diverted to the City and County of San Francisco’s (CCSF) combined sewer and stormwater system which collects and transports both sanitary sewage and stormwater runoff in the same set of pipes. Runoff from the project area enters the system and is treated before being discharged into the San Francisco Bay.

Renovation of the Minnie and Lovie Ward Playfields would involve earthmoving activities such as vegetation removal, excavation, and grading. The total disturbance area associated with project implementation would be approximately 6.1 acres. Construction activities would occur at the existing athletic fields located within a residential area. Consequently runoff from the site would flow into the existing storm drain system. The storm drains in the area are part of the CCSF combined stormwater and sewer system and all runoff entering the system would be treated prior to discharge into receiving waters. Therefore, project construction would not

adversely affect nearby surface water bodies, but could result in an additional source of polluted runoff that could negatively affect stormwater treatment facilities.

During construction, exposed soil from excavated areas could be transported by wind or water and, if not properly managed, could accumulate in storm drains, potentially resulting in increased sediment load in the combined sewer system. Construction activities would also utilize hazardous materials, such as petroleum-based oils, adhesives, solvents, paints, and petroleum lubricants that, if not managed appropriately, could become mobilized by runoff and contribute to non-point source pollution (see also Section E.16, Hazards and Hazardous Materials, for a discussion of project impacts regarding hazardous materials and contaminated soil and groundwater). Temporary storage of construction materials and equipment in work areas and staging areas also creates the potential for release of hazardous materials or sediment to the combined sewer system.

Construction-related stormwater discharges are subject to the requirements of Article 4.1 of the San Francisco Public Works Code. Article 4.1 requires the contractor to develop and implement an erosion and sediment control plan to reduce the impact of runoff from the construction site. The erosion and sediment control plan would be reviewed and approved by the CCSF prior to implementation, and the CCSF would conduct periodic inspections to ensure compliance with the plan. Implementation of standard erosion control measures and compliance with Article 4.1 would ensure this impact is less than significant.

Synthetic Playfields Task Force Findings and SFRPD Recommendations

As also discussed in Section E.16, Hazards and Hazardous Materials, the San Francisco Recreation and Parks Commission (Commission) established the Task Force to review, discuss, and vet existing research on synthetic playfields in March 2008.⁶⁶ The key objectives of the Task Force were to:

- Identify primary environmental and health concerns related to synthetic turf materials;
- Synthesize the scientific research available and discuss the relevance to San Francisco playfields; and
- Provide feedback to inform SFRPD recommendations and a course of action to the Commission.

⁶⁶ San Francisco Recreation and Park Department, *Draft Synthetic Playfields Task Force Findings and Department Recommendations, Report to San Francisco Recreation and Parks Commission*. July 28, 2010, available online at: http://sf-recpark.org/ftp/uploadedfiles/wcm_recpark/SPTF/SPTFDR072508.pdf accessed on March 28, 2011.

The Task Force identified for study 11 environmental and health issues related to synthetic turf products that are of public concern, and for which there would be readily available research. A study team comprised of subject matter experts and park users was established for each issue and reviewed existing research, synthesized the findings, discussed the strengths and weaknesses of the research, assessed the relevance of the research to San Francisco playfields implementation, and identified suggestions and recommendations for SFRPD staff to make to the Commission on how to improve the synthetic turf implementation process. The two issues summarized below are related to the analysis of water quality and aquatic toxicity impacts. Many studies reviewed by the Task Force are discussed in the summaries below, and the Task Force report includes a complete listing of all literature reviewed.

While the Task Force recommended that the SFRPD continue to review literature and new studies as they become available, the primary conclusions and recommendations of each study group are discussed below, followed by a summary of additional research reviewed since completion of the Task Force recommendations. The Commission approved the recommendations of the Task Force on October 2, 2008.

Ecosystem

The study group evaluating the effects of synthetic turf on the ecosystem did not find independent studies that specifically addressed this topic. However, they found one study commissioned by the King County Water and Land Resources Division in Seattle that looked at the quality of stormwater runoff from synthetic turf. According to the task force report, the researchers found that the runoff had no effect on test organisms, and met all state and federal water quality standards.

Water Quality

The water quality study group evaluated the current scientific knowledge concerning the quantity, toxicity, and longevity of heavy metals (particularly cadmium, lead, mercury, and zinc) and known carcinogens that may leach from the synthetic turf materials. For this evaluation, the group reviewed 22 studies and papers which showed that in a laboratory setting, the concentration of heavy metals in leachate from synthetic materials and/or materials used in synthetic turf (i.e. styrene butadiene rubber (SBR) infill from recycled tires or tire shreds) can exceed national and state water quality standards, however the concentrations decreased to safe

standards after a few months. Note that several of the studies refer to styrene butadiene rubber material as “crumb rubber” or “tire crumb.” Additional studies found that toxic substances that leached only affected a very localized area. The study group for water quality concluded that more evidence is needed to evaluate the environmental effects of leachate from synthetic fields, but that water quality concerns regarding leachate could be addressed by lining fields so that leachate could be collected and diverted to the CCSF wastewater collection system, allowing it to be treated at one of the San Francisco wastewater treatment plants. Accordingly, the study group made the following recommendations regarding water quality:

- Prevent leachate from infiltrating to the groundwater basin by collecting it and retaining it, particularly during storm events, for eventual discharge to the CCSF combined sewer system.
- Request (from the manufacturer) or perform leachate tests on synthetic turf to determine if the leachate meets drinking water quality standards before allowing it to infiltrate to the groundwater basin. If the leachate does not meet drinking water quality standards, avoid groundwater infiltration until studies can be performed to understand any potential impacts on ground water quality. If the study results indicate that groundwater quality will not be adversely affected, infiltration may be appropriate. This action should be followed in consultation with the SFPUC and San Francisco Department of Public Health (SFDPH).

The study group for Materials Composition: Overall Chemical Composition and Flammability also made the following recommendations that apply to water quality:

- The Department should conduct or participate in tests of field stormwater runoff to determine the presence and potential levels of zinc and other possible contaminants.
- If the stormwater runoff meets drinking water standards, the SFRPD should recharge it into groundwater, if feasible. If the water does not meet drinking water standards, the Department should collect runoff for discharging into the sewer system, where it will be treated appropriately.
- Immediately following storm events, any stormwater discharges should be managed on site to support efforts to manage the overall CCSF storm water system.
- The Department should not install synthetic turf fields in areas of parks that are prone to flooding.
- All synthetic turf fields should be installed above the water table and feature state of the art drainage systems.
- When purchasing new turf products, SFRPD should request full material composition disclosures and share them with DPH and San Francisco Department of the Environment for feedback.

Runoff and Leachate from Synthetic Playfields

The use of synthetic turf on athletic fields has generated some public concern over the potential for pollutants in leachate and stormwater runoff from these materials, particularly tire-derived SBR that is manufactured from recycled tires and is used as infill material in some synthetic turf products. A number of studies have been conducted to assess the quality of stormwater runoff and leachate from synthetic playfields, and SFRPD has also conducted 2 years of stormwater monitoring at two synthetic turf installations in San Francisco. The results of these studies are discussed below and summarized in **Table 11** (see Section E.16, Hazards and Hazardous Materials, for a summary of studies that address overall hazardous materials associated with synthetic turf).

2007 Integrated Waste Management Board Study

In 2007, the Integrated Waste Management Board published a report prepared under contract by the Office of Environmental Health Hazard Assessment (OEHHA) assessing potential risks to children using outdoor playground and track surfaces constructed from recycled waste tires.⁶⁷ The report, titled *Evaluation of Health Effects of Recycled Waste Tires in Playground and Track Products*, also summarized existing information regarding leachate from these surfaces. The OEHHA report states that published studies indicate that concentrated leachate produced in the laboratory from tire shreds, crumb rubber, or whole tires was toxic to a variety of aquatic organisms in 19 of 31 studies evaluated. Affected organisms include bacteria, algae, aquatic invertebrates, fish, frogs, and plants. Iron and manganese were the only pollutants that exceeded the federal maximum contaminant level (MCL) for drinking water in more than one of the studies. In one study, the concentrations of cadmium, chromium, aluminum, and lead exceeded their MCL. However, the OEHHA report concluded that it is unlikely that leachate from tire shreds used in outdoor applications, such as playground surfaces, would yield such concentrated leachate with high enough concentrations to cause adverse effects on aquatic organisms. In three cases reviewed by OEHHA, groundwater quality was monitored where tire shreds were contained in trenches and in constant contact with the groundwater. In these cases, groundwater in contact with the tire shreds contained elevated levels of many chemicals.

⁶⁷ Integrated Waste Management Board, *Evaluation of Health Effects of Recycled Waste Tires in Playground and Track Products*. January 2007. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2010.0016E.

TABLE 11
SUMMARY OF LITERATURE REVIEW: RUNOFF AND LEACHATE FROM SYNTHETIC PLAYFIELDS

Name of Study	Summary of Conclusions
2007 Integrated Waste Management Board Study	<ul style="list-style-type: none"> • While concentrated leachate has been found to be toxic to a variety of aquatic organisms, and has been found to contain metals concentrations greater than drinking water standards, it is unlikely that leachate from tire shreds used in outdoor applications, such as playground surfaces, would yield such concentrated leachate with high enough concentrations to cause adverse effects. • When installations of playfields are above the water table, risks to groundwater quality are low.
2007 Leachate Study	<ul style="list-style-type: none"> • The concentrations of metals and organic chemicals detected in leachate samples from conditions that mimicked rainfall were generally lower than the applicable drinking water standards. The samples exhibited slight acute and chronic toxicity at 15 days after installation, but none of the samples showed toxicity 3 months after installation.
New York State Studies	<ul style="list-style-type: none"> • Laboratory leaching methods indicated the potential for release of zinc, aniline, phenol, and benzothiazole from synthetic turf installations. However, laboratory leaching procedures are more aggressive than would occur due to rainfall, and these results are not necessarily representative of potential leachate quality from a synthetic turf installation. • Zinc, chromium, copper, lead, and nickel were detected in one stormwater runoff sample. However, the concentrations were below New York surface water standards. • Semivolatile organic compounds were not detected in groundwater samples collected down gradient of four synthetic turf installations.
Connecticut Studies	<ul style="list-style-type: none"> • Laboratory leaching methods indicate that there is a potential for synthetic turf to leach metals, especially copper and zinc. The tests also indicate the presence of benzothiazole in the leachate. • Stormwater samples collected from four fields contained benzothiazole as well as the metals barium, copper, iron, vanadium, and zinc. Concentrations of aluminum, barium, and zinc all exceeded aquatic toxicity criteria at least once during sampling. Based on these findings, zinc was identified as a potential risk to surface waters. Implementation of stormwater BMPs to control stormwater runoff quality are recommended.
San Francisco Stormwater Monitoring	<ul style="list-style-type: none"> • Total iron and manganese concentrations in stormwater samples from two synthetic turf installations exceeded secondary drinking water standards. Dissolved copper concentrations exceeded the marine surface water environmental screening level in stormwater samples from both fields.

However, the concentrations rapidly decreased a few feet away from the trench the tire shreds were contained in. The report concluded that when installations of playfields are above the water table, as the Synthetic Turf Task Force Report recommends, and are not in long-term contact with the groundwater, risks to groundwater quality associated with use of synthetic turf materials containing tire shreds are low.

2007 Leachate Study

A joint study conducted by ALIAPUR (a French governmental agency responsible for regulating the use of used tires) and ADEME (the French Agency for Environment and Energy Management), installed a rain collection system beneath four applications of different synthetic field types, subjected the fields to simulated rain events, and collected samples of the leachate from each field over an 11-month period.⁶⁸ The field types included three types of infill material (two with virgin materials and one with recycled tire granules), and one control without infill material. The collected samples were analyzed for total cyanide, phenol, total hydrocarbons, 16 polynuclear aromatic hydrocarbons, total organic carbon, 15 metals, fluorides, nitrates, ammonium, chlorides, sulfates, pH, and conductivity.

The results of that study showed relatively low but detectable concentrations of a number of organic compounds and metals. However, these concentrations were generally lower than the applicable drinking water standards. The leachate initially showed a slight acute and chronic toxicity at 15 days after installation, but none of the samples showed toxicity 3 months after installation.

New York State Studies

The New York State Department of Environmental Conservation conducted a series of studies to assess the potential for release of pollutants from crumb rubber material into the air and by leaching.⁶⁹ The studies included laboratory analysis of four types of crumb rubber material (car, truck, a mixture of car and truck, and cryogenically produced), sampling of air and surface water at two turf fields in New York City, and groundwater sampling downgradient of four turf fields.

Laboratory analysis of crumb rubber samples using the Synthetic Precipitation Leaching Procedure⁷⁰ indicated the potential for release of zinc, aniline, phenol, and benzothiazole. Although the laboratory leaching method may not be representative of actual field conditions, these results were used as an indicator for the selection of analytes to be considered for the field

⁶⁸ Moretto, Robert. Environmental and Health Assessment of the Use of Elastomer Granulates (Virgin and from Used Tyres) as Filling in Third-Generation Artificial Turf. 2007. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2001.0016E.

⁶⁹ New York State Department of Conservation, New York State Department of Health. *An Assessment of Chemical Leaching, Releases to Air and Temperature at Crumb-Rubber Infilled Synthetic Turf Fields*. May 2009. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2010.0016E.

⁷⁰ The Synthetic Precipitation Leaching Procedure, conducted in accordance with USEPA Test Method 1312, is designed to determine the mobility of both organic and inorganic analytes present in liquids, soils, and wastes.

sampling. The results also indicated that the leaching potential is dependent on the type of crumb rubber, and crumb rubber composed of truck tires had the highest leaching potential.

Only one surface water runoff sample was collected, so the data is inconclusive. No organics were detected in this sample. While zinc, chromium, copper, lead, and nickel were detected in the runoff sample, the concentrations were below New York surface water standards. To assess effects on groundwater quality, four turf fields in areas where sandy soil is predominant (ranging in age from less than 1 year old to 7 years old) were selected, and two to three downgradient wells were installed at each field. A total of 32 groundwater samples were collected at depths ranging from 8 to 70 feet and analyzed for semivolatile organic compounds (SVOCs). SVOCs were not detected in any of the samples.

Connecticut Studies

In 2010, five Connecticut agencies under a joint agreement completed a study of synthetic turf fields to assess health and environmental risks from off-gassing and leaching of chemicals from crumb rubber material. One component of the study included measurements of off-gassing and leaching of chemicals under defined laboratory conditions,⁷¹ and another component included measurements of leaching of metals in stormwater runoff from turf fields.⁷² These findings are discussed below.

Laboratory testing of crumb rubber material was performed using the Synthetic Precipitation Leaching Procedure to indicate the primary pollutants likely to be found in stormwater coming from synthetic turf fields. Results indicated the presence of benzothiazole with an average concentration of 0.153 micrograms per liter ($\mu\text{g/L}$). The predominant metals identified in the leachate from the crumb rubber material were zinc, followed by copper, manganese, and lead. The concentrations of zinc detected in the leachate were about 500 times greater than Connecticut's toxicity criteria. The leachate study indicates that there is a potential for synthetic turf to leach metals, especially copper and zinc.

⁷¹ Connecticut Agricultural Experimental Station, *2009 Study of Crumb Rubber Derived From Recycled Tires, Final Report*, revised May 4, 2010. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2010.0016E.

⁷² Connecticut Department of Environmental Protection, *Artificial Turf Study, Leachate and Stormwater Characteristics Final Report*, July 2010. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2010.0016E.

A stormwater sampling plan was implemented at four synthetic turf fields to collect runoff during or after precipitation events. A total of eight stormwater samples were collected between September and December 2009 and analyzed for volatile organic compounds (VOCs), SVOCs, metals, pesticides, and polychlorinated biphenyls (PCBs), pH, and acute aquatic toxicity. No standard VOC or SVOC compounds were detected; however, nine compounds were tentatively identified at concentrations ranging from 1 to 150 (µg/L). Benzothiazole was detected in two samples at up to 4.9 µg/L. Of the compounds tentatively identified, none are considered particularly toxic to aquatic organisms at the estimated concentrations. Metals analyses identified the presence of aluminum, barium, copper, iron, vanadium, and zinc in the runoff. Concentrations of zinc in three of the samples exceeded Connecticut's acute aquatic life criteria of 65 µg/L, with concentrations ranging from 130 to 260 µg/L. Concentrations of aluminum, barium, and zinc all exceeded chronic aquatic toxicity criteria at least once during sampling. Toxicity tests indicated that three of the eight samples were acutely toxic.⁷³ Based on these findings, zinc was identified as a potential risk to surface waters.

The Connecticut Department of Environmental Protection report notes, however, that while zinc concentrations in stormwater from synthetic turf fields may pose a risk to surface waters, especially to smaller water courses, these fields are not the sole source of stormwater runoff in any given watershed. Runoff from the fields would be combined with the runoff from adjacent areas. Further, the Connecticut Department of Environmental Protection notes the levels of zinc in urban runoff are comparable to the concentrations detected in the discharge from synthetic turf fields. The Connecticut Department of Environmental Protection recommends that stormwater best management practices (BMPs) that demonstrate significant removal of dissolved zinc be incorporated into the design of drainage systems for synthetic turf fields.

San Francisco Stormwater Monitoring

To provide an assessment of stormwater runoff quality specific to San Francisco synthetic playfields, SFRPD conducted stormwater sampling at Garfield Square Park and the South Sunset Playground during two rainy seasons. The sampling included two events in February and March of 2010, near the end of the 2009-2010 rainy season, and two events in the 2010-2011 rainy season, one in December 2010 and one in February 2011. For each sampling event, the sampling was

⁷³ Acute toxicity is observed when there is less than 90 percent survival of the test organisms in the undiluted effluent.

conducted in accordance with the Synthetic Turf Stormwater Quality Monitoring Plan developed by SFPUC.⁷⁴ One grab sample of stormwater was collected from the catch basin at each field, and the samples were analyzed at the SFPUC Water Quality Division Laboratory for pH; specific conductance; turbidity; total dissolved solids; total suspended solids; total and dissolved metals (including antimony, arsenic, barium, beryllium, cadmium, cobalt, chromium, copper, iron, manganese, mercury, molybdenum, nickel, lead, selenium, silver, thallium, vanadium, and zinc); volatile organic compounds; and semivolatile organic compounds. The temperature of the samples was also measured in the field.

VOCs and SVOCs were not detected in any of the stormwater samples from either field. All of the dissolved concentrations⁷⁵ were below the applicable MCL. With the exception of total iron and manganese, all of the total metals concentrations were also below the applicable MCL. The total iron concentration in the stormwater runoff samples from the Garfield Square Park field in February and December 2010, and in February 2011, were 14.40 µg/L, 14.98 µg/L, and 187.65 µg/L, respectively. The total iron concentration in the March 2010 sample was 1741.50 µg/L, and this was the only total iron concentration that exceeded the secondary MCL of 300 µg/L in stormwater runoff samples from the field at Garfield Square Park. The total iron concentrations in stormwater runoff samples from the South Sunset Playground field ranged from 1,386.80 µg/L to 3624.30 µg/L and exceeded the secondary MCL of 300 µg/L in all four samples collected.

The total manganese concentration in the February and March 2010 and February 2011 runoff samples from the South Sunset Playground field were 51.21 µg/L, 144.25 µg/L, and 66.15 µg/L, respectively. All three of these total concentrations exceeded the secondary MCL of 50 µg/L, but none of the total manganese concentrations detected in the stormwater samples from the field at Garfield Square Park exceeded the secondary MCL. As discussed in Section E.16, Hazards and Hazardous Materials, iron and manganese are components of the steel belts and beads used in tires. The MCLs for both iron and manganese are secondary MCLs, which are established to protect the aesthetic quality of drinking water, and are based on effects such as taste and odor. Unlike primary MCLs, these drinking water standards are not based on potential health effects.

⁷⁴ San Francisco Public Utilities Commission. *Synthetic Turf Stormwater Quality Monitoring Plan*. February 2, 2010. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2010.0016E.

⁷⁵ The metals results measured total and dissolved concentrations; though dissolved metals concentrations (rather than total metals) are the relevant indicator for potential to be transported to groundwater.

Environmental screening levels (ESLs) for freshwater and marine surface waters are generally based on dissolved chemical concentrations.⁷⁶ None of the dissolved metals concentrations exceeded the freshwater surface water ESL. The only dissolved metals concentrations that exceeded ESLs for marine surface waters were the dissolved copper concentrations. The dissolved copper concentrations in the runoff samples from the Garfield Square Park field ranged from 4.67 to 5.90 µg/L, all of which are in excess of the marine surface water ESL of 3.1 µg/L. The concentration of dissolved copper in the February and December 2010 samples from the South Sunset Playground Field were 4.32 µg/L and 3.53 µg/L, respectively. Both of these concentrations also exceeded the marine surface water ESL of 3.1 µg/L.

These sampling results are representative of the stormwater runoff quality from the Garfield Square Park and the South Sunset Playground. However, the composition of the styrene butadiene rubber infill material used in synthetic turf can vary widely because of the variable composition of the tires used to manufacture the infill material. Therefore, for other fields, it would be necessary to conduct additional sampling to assess stormwater runoff quality specific to that installation, and future studies should also evaluate background metals concentrations in runoff from grass fields to evaluate the contribution of metals due to the synthetic turf materials.

San Francisco Synthetic Turf Standards

In accordance with the findings of the Task Force discussed above, SFRPD developed synthetic turf standards in 2009 to address the required composition of synthetic turf products used in San Francisco, as well as the post-consumer recycled content of the new turf products purchased and recyclability of used turf products at the end of their useful life.⁷⁷ In accordance with these standards, the SFRPD requires potential vendors to provide the information regarding the turf composition when submitting project bids, and any bids with incomplete information or insufficient data are rejected. These standards were used to purchase synthetic turf for the Kimbell Playground in 2010 and Mission Playground field renovations in 2011.

As discussed in Section E.16, Hazards and Hazardous Materials, the synthetic turf standards specify that the vendor must submit a product analysis with their project bids, quantifying the content of their product. Maximum levels for soluble chromium, lead, and zinc in SBR infill

⁷⁶ The ESLs for arsenic and selenium are based on total metals concentrations.

⁷⁷ City and County of San Francisco Recreation and Park Department, *Synthetic Turf Standards Information Only*, July 8, 2009, available online at: <http://www.scparks.com/pdfs/Synthetic%20Turf%20Standards.pdf>, accessed on March 30, 2011.

materials and non-SBR infill materials are specified in the standards. For both categories of infill materials, the maximum soluble concentration of chromium is 0.05 milligrams per liter (mg/L) and the maximum soluble concentration of lead is 0.0025 mg/L. The maximum concentration of soluble zinc in SBR infill is 250 mg/L and the maximum concentration in non-SBR infill materials is 0.081 mg/L. These maximum levels are summarized in **Table 12**, below, along with ESLs for groundwater that is a current or potential drinking water source and drinking water maximum contaminant levels for each metal. For chromium and lead, these maximum concentrations are all equal to or less than the criteria identified. Although the zinc standard for SBR infill is higher than the drinking water MCL, the Waste Extraction Test used to determine the soluble concentration for waste disposal purposes uses an acidic solution which is more aggressive at dissolving constituents from a material than water, and is not necessarily representative of the zinc concentration that could dissolve into water as a result of stormwater runoff or leachate through the field.

**TABLE 12
SYNTHETIC TURF STANDARDS, SCREENING LEVELS,
AND HAZARDOUS WASTE CRITERIA—SOLUBLE CONCENTRATIONS**

Parameter	Synthetic Turf Standard		Screening Level	California Drinking Water Standard
	Maximum Concentration in SBR Infill Leachate ^a (mg/L) ^b	Maximum Concentration in Non-SBR Infill Leachate ^a (mg/L)	Environmental Screening Level for Groundwater that is a Current or Potential Drinking Water Source ^c (mg/L)	Drinking Water Standard (mg/L)
Chromium ^d	0.05	0.05	0.18	5.0 ^e
Lead	0.0025	0.0025	0.0025	0.015 ^e
Zinc	250	0.081	0.081	5.0 ^f

NOTES:

^a Source is CCSF, 2009

^b mg/L = milligram per liter

^c Source is RWQCB, 2008

^d There are no screening criteria or hazardous waste criteria for total chromium, so values for trivalent chromium are used.

^e Primary drinking water standard

^f Secondary drinking water standard

^g – = criterion has not been established for this parameter

The proposed project would include the installation of approximately 267,000 square feet of synthetic turf on the existing athletic fields. The synthetic turf would consist of four components: fiber, infill, backing, and underlayment. The fiber, which would consist of polyethylene, would be grass-like in appearance. The infill, which would be used to provide stability, would comprise

about 70 percent SBR material and 30 percent sand. The SBR infill is recovered from scrap tires and from the tire re-treading process. The fiber and infill would be supported by a backing made up of a combination of permeable woven and un-woven polypropylene fabrics that provide strength and vertical drainage. Underlayment would consist of drainage tile or an aggregate rock base.

While there is a substantial amount of research that suggests the runoff from the fields would not cause adverse water quality effects, the composition of SBR material is dependent on the tires used in the manufacturing process and can be variable. Therefore, additional material-specific information is needed to assess the specific levels of contaminants in runoff from the synthetic turf fields.

However, as discussed above, the SFRPD would require the vendor for the synthetic turf to comply with San Francisco's Synthetic Turf Standards which limits the concentration of metals in the turf product. Further, to prevent the generation of polluted runoff from the fields until material-specific information is available regarding stormwater runoff quality from the proposed synthetic turf installation, the SFRPD would construct the playfields with an underlying liner and a drainage system equipped to capture all runoff and leachate from the fields. The drainage system would initially direct all runoff and leachate to the combined sewer system via a new connection to the existing drainage system beneath Lobos Street. SFRPD would conduct periodic water sampling from the underdrain system, in conjunction with SFPUC, and evaluate the quality of water drained from the synthetic turf. If sampling by the SFRPD indicates that runoff and leachate quality is acceptable, SFPUC could allow drainage from the synthetic turf athletic fields to infiltrate into the groundwater basin.

If approval is obtained from the SFPUC to infiltrate runoff from the synthetic turf, the proposed project would be required to comply with the San Francisco Stormwater Management Ordinance. This ordinance requires that projects that disturb more than 5,000 square feet of land capture and treat rainfall from a design storm of 0.75 inch using acceptable BMPs. Compliance with the ordinance would require that SFRPD prepare a stormwater control plan describing the BMPs that would be implemented, including a plan for post construction operation and maintenance of the BMPs. Specifically, the plan would include the following elements:

- Site characterization
- Design and development goals
- Site plan
- Site design

- Source controls
- Treatment BMPs
- Comparison of design to established goals
- Operations and maintenance plan

The project would be required to achieve the standards specified in LEED® SS6.1 (Stormwater Design: Quantity Control) to minimize the flow and volume of stormwater into the combined sewer system. The selection of treatment BMPs to reduce pollutant loads in stormwater runoff is guided by existing site conditions and the pollutants of concern at the site. Treatment BMPs would reduce the pollutant loads in stormwater via infiltration (e.g., permeable pavement or infiltration basins or trenches), detention (constructed wetlands, detention pond or vault, or wet pond), bioretention (e.g., flow through planter or rain garden), or biofiltration (e.g., vegetated areas; media, sand, or vegetated rock filters; swirl separators, water quality inlets, or drain inserts). One or more treatment BMPs could be required to address each of the potential stormwater pollutants of concern.

The operations and maintenance plan prepared as part of the stormwater control plan would identify who has the operational responsibility for the facility, applicable maintenance requirements for each stormwater control, detailed requirements for each treatment and control BMP, and required maintenance of facilities. These requirements would transfer to any new owner, occupant, or lessee of the facility.

The stormwater control plan must be reviewed and stamped by a licensed landscape architect, architect, or engineer. SFPUC reviews the plan and certifies compliance with the guidelines and inspects stormwater BMPs once they are constructed; any issues noted during the inspection must be corrected. The owner is responsible for completing an annual self-certification inspection, and must submit completed checklists and maintenance logs for the year to SFPUC. In addition, SFPUC would inspect all stormwater BMPs every third year, and any issues identified by either inspection must be resolved before SFPUC could renew the certificate of compliance.

As described in the Project Description, there would be an increase in visitors to the project site, and this increase would result in an increase in sanitary sewage and stormwater produced at the site. Dry weather flows to the Oceanside Water Pollution Control Plant (OWPCP) are currently 14 million gallons per day (MGD), and the treatment plant has the capacity to treat up to 43 mgd to a secondary level. The increased flows from the project represent a small portion of the

existing dry weather flows to the OWPCP and are well within the capacity of the treatment plant. During wet weather periods, flows in excess of 175 mgd are discharged at the shoreline through one of seven combined sewer overflow (CSO) structures located along the ocean coast. The project would not result in an increase in the number of CSO discharges, but would minimally contribute to the volume of discharges. The volume of discharge into the combined sewer system would be reduced with compliance with the Stormwater Design Guidelines.

With implementation of the monitoring program described above to evaluate runoff quality from the playfields, and compliance with the Stormwater Design Guidelines once approval is obtained to infiltrate stormwater runoff, impacts related to additional sources of polluted runoff and contribution of runoff water that would exceed the capacity of the existing or planned drainage system would be less than significant.

Impact HY-2: The proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. (Less than Significant)

The proposed project site is underlain by the Westside Groundwater Basin, which extends from San Francisco south to San Mateo County.⁷⁸ Within San Francisco, groundwater from the Westside Groundwater Basin is primarily used for irrigation at Golden Gate Park, the Edgewood Development Center, and three golf courses located in the vicinity of Lake Merced.

If ground-disturbing construction activities, such as grading and excavation occur at a depth equal or greater than the groundwater table, construction dewatering would be required. Dewatering would result in the temporary depletion of groundwater resources. Project construction would require excavation to a depth of approximately 1 foot for turf installation and 10 feet for light standards. Given the hilly terrain and elevation of the project area and that the depth to groundwater in low-lying portions of the Westside Groundwater Basin is a least 6 feet during wet weather, it is likely that groundwater depths at the project site are greater than 10 feet during wet weather. Pooling of stormwater behind the existing retaining wall at the project site is likely the result of stormwater runoff from the paved recreational facilities that are on the tiered level above the athletic fields. Consequently there is no evidence of a high groundwater table at

⁷⁸ Department of Water Resources, *San Francisco Bay Hydrologic Region, Westside Groundwater Basin, California's Groundwater, Bulletin 118*. Updated January 20, 2006. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2010.0016E.

the project location. As a result, groundwater is not likely to be encountered during construction and dewatering would not be required. Therefore, construction impacts to groundwater supplies would be less than significant.

Operation of the Minnie and Lovie Ward Playfields would replace the existing natural turf with synthetic turf. The grass turf currently infiltrates a portion of all stormwater flows at the athletic fields. Installation of the synthetic fields would include an impervious underlayer that would capture all stormwater flows and divert them into the combined sewer system as discussed above. Consequently, water that currently infiltrates through the grass turf and into the groundwater basin would be captured by the synthetic turf's underlayer, eliminating groundwater infiltration at the site.

Given that the volume of water that could be recharged over the 6.1 acre area is relatively small and that groundwater is not currently used as drinking water supply in San Francisco, diverting the stormwater runoff from the project site into the stormwater system would have a less-than-significant impact on groundwater storage.

Impact HY-3: The proposed project would not expose people, housing, or structures to substantial risk of loss due to flooding. (Less than Significant)

Development in the City and County of San Francisco must account for flooding potential. Flood risk assessment and some flood protection projects are conducted by federal agencies including the Federal Emergency Management Agency (FEMA) and the U.S. Army Corps of Engineers (Corps). The flood management agencies and cities implement the National Flood Insurance Program (NFIP) under the jurisdiction of FEMA and its Flood Insurance Administration. Currently, the City of San Francisco does not participate in the NFIP and no flood maps are published for the City. However, FEMA is preparing Flood Insurance Rate Maps (FIRMs) for the City and County of San Francisco for the first time. FIRMs identify areas that are subject to inundation during a flood having a 1 percent chance of occurrence in a given year (also known as a "base flood" or "100-year flood"). FEMA refers to the flood plain that is at risk from a flood of this magnitude as a special flood hazard area ("SFHA").

The Board of Supervisors adopted the Floodplain Management Ordinance on March 23, 2010. The Department of Public Works will publish flood maps for the City, and applicable City departments and agencies may begin implementation for new construction and substantial improvements in areas shown on the Interim Floodplain Map. The proposed project is located on an elevated incline that is outside of areas in the City prone to flooding during storms. It is also mapped outside of the preliminary flood hazards area.⁷⁹ Therefore, the project would result in less than significant impacts related to exposing people or structures to risks of flooding.

Impact HY-4: The proposed project would not expose people or structures to a significant risk of loss, injury or death involving inundation by dam failure, seiche, tsunami, or mudflow. (No Impact)

The project site is located approximately two miles from the Merced Manor Reservoir and the McLaren Park Tanks. If the reservoir or tank structures fail at these locations, downstream flooding could occur. However, the project site is not located downstream of these structures and is not mapped as part of a dam inundation susceptibility area by CCSF or California Department of Water Resources (DWR). Thus, there would be no impacts from dam inundation hazards.

A tsunami is a large wave or series of waves usually generated by an earthquake, volcanic eruption or coastal landslide. The project site is not mapped as being susceptible to tsunami runup hazards by either the City of San Francisco or the ABAG.

Seiches form in enclosed bodies of water, such as lake or reservoir when exposed to significant ground shaking. There are no enclosed water bodies in the vicinity of the project. Therefore, there is no risk of damage due to seiche.

Mudflows consist of rapid landslides with high volumes of water that can be associated with dam releases or volcanic eruptions. The project topography and geologic environment, also discussed in Section E.14, Geology and Soils, does not include characteristics that are generally subject to mudflows. Thus, there would be no impacts from mudflow hazard.

⁷⁹ City and County of San Francisco, Office of the City Administrator, National Flood Insurance Preliminary Floodplain Map (Citywide), available at <http://www.sfgsa.org/Modules/ShowDocument.aspx?documentid=1761>, accessed August 15, 2011.

Impact HY-5: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would have a less-than-significant impact on hydrology and water quality. (Less than Significant)

For the reasons discussed above, the proposed project’s effects related to hydrology and water quality, both individually and cumulatively, are considered less than significant.

<i>Topics:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
16. HAZARDS AND HAZARDOUS MATERIALS— Would the project:					
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The project site is not located on any available environmental databases as compiled by the California Department of Toxic Substances Control (DTSC) and the State Water Resources Control Board pursuant to Government Code Section 65962.5. The project site is not listed in

database reports from State and federal regulatory agencies that identify businesses and properties that handle or have released hazardous materials or waste. The project site is not located near a public or private airport or within an airport land use plan area. Therefore, topics 16d, e, and f would not apply to the proposed project.

Impact HZ-1: The proposed project would not create a significant hazard through routine transport, use, disposal, handling or emission of hazardous materials. (Less than Significant)

The use of synthetic turf on athletic fields has generated some public concern over the potential health issues associated with the use of these materials, particularly the tire-derived styrene butadiene rubber (SBR) that is manufactured from recycled tires and is used as infill material in some synthetic turf products. To address this, the San Francisco Recreation and Park Department (SFRPD) consulted with the City and County of San Francisco's Department of the Environment (SFE) and Department of Public Health (SFDPH). The San Francisco Recreation and Parks Commission subsequently established a Synthetic Fields Task Force (Task Force) to review, discuss, and vet existing scientific research on synthetic turf products. This section discusses the findings of the Task Force related to the hazardous-materials-related health effects of the use of synthetic turf products and issues related to disposal of the turf at the end of its useful life. Relevant research since the Task Force findings were published in 2008 is also discussed, along with a discussion of the 2007 Integrated Waste Management Board study also reviewed by the Task Force. To help provide a framework for these discussions, the composition of synthetic turf and a description of the process used to evaluate human health risks are also addressed.

SFRPD has developed synthetic turf standards that specify requirements for the content and recyclability of synthetic turf products that would be used on the City and County of San Francisco's (CCSF's) recreational fields. A discussion of these standards follows the discussion of research addressing the hazardous-materials-related health effects of the use of synthetic turf products.

Composition of Synthetic Turf

As described in the Project Description, the synthetic turf to be installed under the proposed project would consist of four components: fiber, infill, backing, and underlayment. The fiber, which would consist of polyethylene, would be grass-like in appearance. The infill, which would

be used to provide stability, would be comprised of about 70 percent SBR and 30 percent sand. The SBR infill is recovered from scrap tires and from the tire re-treading process. The fiber and infill would be supported by a backing made up of a combination of permeable woven and unwoven polypropylene fabrics that provide strength and vertical drainage. Underlayment would consist of a drainage tile or an aggregate rock base.

SBR is finely ground rubber derived from recycled scrap tires, and has been demonstrated to contain a number of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs) (including polynuclear aromatic hydrocarbons), and metals. VOCs in the SBR originate from the use of carbon black and petroleum oils in the tire production process.⁸⁰ The predominant SVOCs identified are benzothiazoles, which are used in tire production to accelerate the vulcanization process and help bond the metal wires and metal beads to the tire rubber; aniline, which is added to tires to inhibit rubber degradation; and phenols, which are present in petroleum oils and/or coal tar fractions used as softeners and extenders in tire production. The predominant metals include zinc, resulting from zinc oxide used as an activator in the tire vulcanization process (purposely added to tires at concentrations of two percent or more); iron and manganese from the steel belts and beads used in the tires; barium, which is used to catalyze the synthesis of polybutadiene rubber; lead, which was formerly used as an activator of the vulcanization process; and chromium, which is used in steel production. Today, the production of SBR material from tires typically includes a step to remove 99 percent of the steel belting and bead material, which should result in lower levels of iron, manganese, and chromium in the SBR material relative to earlier products. The SBR material also contains carbon black, an industrial chemical used in the manufacturing of automobile tires and other plastic materials. It is composed of nanoparticles that are much smaller than PM₁₀ and PM_{2.5} (nanoparticles vary in size from 1 to 100 nanometers, with a billion nanometers forming a meter).

Concepts of Human Health Risk Evaluation

A human health risk evaluation is used to assess whether exposure to chemicals would pose a health risk to humans. The evaluation includes several components, including data evaluation to characterize the chemicals present and their concentrations; an exposure assessment to evaluate what receptors could be exposed to the chemicals and through which pathways (i.e., inhalation,

⁸⁰ Integrated Waste Management Board, *Evaluation of Health Effects of Recycled Waste Tires in Playground and Track Products*. January 2007, available online at: <http://www.calrecycle.ca.gov/publications/Tires/62206013.pdf>, accessed on March 28, 2011.

ingestion, dermal contact); and a risk characterization. The risk characterization includes the assessment of noncarcinogenic (noncancer) and carcinogenic (cancer) risks to each potential receptor.

The hazard quotient is used to evaluate potential noncancer health risks for each chemical. To address potential additive noncancer effects, the individual hazard quotient for each chemical and exposure route is summed to calculate a hazard index. A hazard index of less than or equal to 1 is indicative of acceptable levels of exposure for chemicals having an additive effect.

Cancer health risks are defined in terms of the probability of an individual developing cancer as the result of exposure to a given chemical at a given concentration. To address potential additive effects, the estimated cancer risks for each chemical and exposure route are summed to estimate the total excess cancer risk for the exposed individual. The U.S. Environmental Protection Agency (USEPA) considers estimates of theoretical excess cancer risk of less than 1 in 1,000,000 (1×10^{-6}) to be *de minimis*, or acceptable. Risks within the range of 1 in 1,000,000 to 100 in 1,000,000 (1×10^{-4}) may also be acceptable depending on other risk management factors.⁸¹

Health-based screening levels established by the regulatory agencies can also be used to provide a conservative estimate of exposure risks. These levels are established by governmental agencies using conservative exposure assumptions and using the noncancer and cancer risk thresholds discussed above.

Particulate matter, also considered in risk evaluations related to inhalation, is a class of air pollutants that consists of solid and liquid airborne particles in an extremely small size range. Particulate matter is measured in two size ranges: PM₁₀, for particulate matter less than 10 microns in diameter, and PM_{2.5}, for particulate matter less than 2.5 microns in diameter. Fine particulates small enough to be inhaled into the deepest parts of the human lung can cause adverse health effects, and studies have shown that elevated particulate levels contribute to the death of approximately 200 to 500 people per year in the Bay Area. High levels of particulates have also been known to exacerbate chronic respiratory ailments, such as bronchitis and asthma, and have been associated with increased emergency room visits and hospital admissions.⁸²

⁸¹ California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, *A Guide to Health Risk Assessment*, 2006.

⁸² Bay Area Air Quality Management District, *BAAQMD CEQA Guidelines, Assessing the Air Quality Impacts of Projects and Plans*, updated, June 2010. available online at http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_December%202010.ashx, accessed on March 28, 2011.

As noted above, carbon black is a component of the SBR material, composed of nanoparticles that are much smaller than PM₁₀ and PM_{2.5}. Note that several of the studies refer to styrene butadiene rubber material as “crumb rubber” or “tire crumb.” Laboratory research indicates that there can be health risks associated with the inhalation of these particles. However, the limited available research does not address the potential for the generation of nanoparticles from actual use of tires or from SBR infill as a result of play on synthetic turf fields. Given the low potential for generation of PM₁₀ and PM_{2.5} (discussed below) and because the turf installations are generally outside where wind will easily disperse particulate matter, it is expected that exposures to nanoparticles as a result of play on synthetic turf fields that use SBR infill would be minimal, if any at all.

2007 Integrated Waste Management Board Study

In 2007, the California Integrated Waste Management Board published a report prepared under contract by the state’s Office of Environmental Health Hazard Assessment (OEHHA) assessing potential risks to children using outdoor playground and track surfaces constructed from recycled waste tires.⁸³ The report, titled *Evaluation of Health Effects of Recycled Waste Tires in Playground and Track Products*, evaluated health risk associated with children’s exposure to chemicals in the play surfaces via 1) ingestion of the loose rubber tire shreds using existing literature and through a gastric digestion simulation conducted as part of the study, 2) ingestion as a result of hand-to-surface contact followed by hand to mouth exposure, and 3) skin sensitization as a result of dermal contact. The following summarizes the risk associated with each exposure pathway:

- **Ingestion of loose tire shreds based on review of existing literature.** Based on review of 46 studies of chemicals released from tire shreds in laboratory settings and field studies, 49 chemicals were identified. The study used the highest concentration of each chemical identified to evaluate noncancer and cancer health risks to a typical 3-year-old child resulting from the one-time ingestion of 10 grams of tire shreds. For noncancer risks, the study found that only exposure to zinc exceeded its health-based risk screening level. The hazard index based on all chemicals identified except zinc is 1.8, while that involving zinc is 6.9. However, OEHHA concluded that it is unlikely that one-time ingestion of 10 grams of tire shreds would produce adverse health effects, because symptoms related to zinc ingestion develop over a period of weeks when zinc is ingested daily. In addition, the ingested dose of zinc would be less than the Recommended Dietary Allowance of 3 milligrams per day (mg/day) and the Tolerable Upper Intake Level of 7 mg/day for a 3 year old child. At most, some gastrointestinal distress would be expected as a result of ingestion

⁸³ Integrated Waste Management Board, 2007.

of such levels of zinc. Further, the amount of zinc leaching from ingested rubber could be substantially less than what was used in the calculations based on the gastric digestion simulation, described below. OEHHA concluded that since the hazard index based on all chemicals except zinc is close to 1, the first tier screening level assessment does not indicate that ingestion of 10 grams of tire shreds would represent a serious noncancer health risk. Seven of the chemicals identified in the tire shreds would contribute to cancer risks, and the increased cancer risk to children less than 2 years in age, resulting from ingestion of 10 grams of tire shreds, would be 1.2 in 10 million, which is less than the *de minimis* level of 1 in 1,000,000.

- **Ingestion of loose tire shreds based on gastric digestion simulation.** A gastric simulation conducted by OEHHA detected 22 chemicals released from tire shreds after they were incubated for 21 hours at 37 degrees Celsius in a solution mimicking the gastric environment. Similar to the above assessment, the study used the concentration of each chemical detected to evaluate noncancer and cancer risks to a typical 3-year-old child resulting from the one-time ingestion of 10 grams of tire shreds. For noncancer risks, the study found that none of the chemical concentrations exceeded the health-based screening level. The hazard index for the mixture was 2.2, and OEHHA concluded that since the hazard index is close to one and risk assessment has conservatism built into the process, the first-tier screening level assessment does not indicate that ingestion of 10 grams of tire shreds would represent a serious noncancer health risk, suggesting a low risk of noncancer acute health effects. Five of the chemicals detected in the extract would contribute to cancer risks, and the cancer risk resulting from ingestion of 10 grams of tire shreds would be 3.7 in 100 million, which is considerably less than the *de minimis* level of 1 in 1,000,000.
- **Ingestion through hand-to-surface-to-mouth activity.** To evaluate health risks associated with ingestion of chemicals picked up on the hands and subsequently ingested, OEHHA performed wipe sampling of three in-use playground surfaces containing recycled tire rubber. Of the chemicals analyzed, only zinc and four polycyclic aromatic hydrocarbons (PAHs) (chrysene, fluoranthene, phenanthrene, and pyrene) were identified at levels that were at least three times background, and all concentrations were below chronic screening values, suggesting a low risk of adverse noncancer health effects. Only one of the PAHs (chrysene) is a carcinogen. Assuming that youths, age 1 to 12, would use the playgrounds, the increased cancer risk resulting from chrysene would be 2.9 in a million. While this increased cancer risk level is slightly higher than the *de minimis* level of 1 in 1,000,000, the cancer risk is considered acceptable by OEHHA because this small magnitude of increased risk is within the often acceptable range of range of 1 in 1,000,000 to 100 in 1,000,000.
- **Skin sensitization to surfaces made of recycled tire.** Natural rubber contains latex, a proven skin sensitizer. OEHHA contracted with a laboratory to perform skin sensitization testing of tire-derived surfacing, and found that these surfaces would not cause skin sensitization in children, nor would they be expected to elicit skin reactions in children already sensitized to latex.

In addition, the OEHHA study reviewed soil and air quality data obtained after a fire in a playground surface made of chipped tires at the Yulupa Elementary School in Sonoma County. Although soil sampling showed detectable levels of metals, VOCs, PAHs, dioxins, and furans,

the concentrations were at or below background levels, indicating a low risk to the environment. The air above the burn site was judged by USEPA to pose no health risks to cleanup workers, and the soil/rubber mixture removed from the site was judged to be a nonhazardous waste suitable for disposal in a designated Class III disposal facility. SFDPH reviewed this report and did not find evidence of bias in the report methods, findings, or conclusions, and concluded that the report is reliable and can be used as a primary basis for decision making.⁸⁴ SFDPH further stated that the conclusions of the report are supported by several other local, State, and international government agencies that have carefully considered the evidence and potential health risks associated with synthetic turf athletic fields, including the Connecticut Department of Public Health and the New York City Department of Health and Mental Hygiene.

See Section E.15, Hydrology and Water Quality, for a summary of findings related to water quality found in this study.

Synthetic Playfields Task Force Findings and SFRPD Recommendations

In March 2008, the San Francisco Recreation and Parks Commission (Commission) established the Task Force to review, discuss, and vet existing research on synthetic playfields.⁸⁵ The key objectives of the Task Force were to:

- Identify primary environmental and health concerns related to synthetic turf materials;
- Synthesize the scientific research available and discuss the relevance to San Francisco playfields; and
- Provide feedback to inform SFRPD recommendations and a course of action to the Commission.

The Task Force identified 11 environmental and health issues related to synthetic turf products that are of public concern, and for which there would be readily available research. A study team comprised of subject matter experts and park users was established for each issue and reviewed existing research (including the 2007 OEHHA study described above), synthesized the findings, discussed the strengths and weaknesses of the research, assessed the relevance of the research to

⁸⁴ City and County of San Francisco Department of Public Health, Environmental Health Section, *Memo to Dawn Kamalanathan, Planning Director, San Francisco Department of Recreation and Parks re Artificial Turf Products*. February 6, 2008. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2010.0016E.

⁸⁵ San Francisco Recreation and Park Department, *Draft Synthetic Playfields Task Force Findings and Department Recommendations, Report to San Francisco Recreation and Parks Commission*. July 28, 2010, available online at: http://sf-recpark.org/ftp/uploadedfiles/wcm_recpark/SPTF/SPTFDR072508.pdf accessed on March 28, 2011.

San Francisco playfields implementation, and identified suggestions and recommendations for SFRPD staff to make to the Commission on how to improve the synthetic turf implementation process. The five issues summarized below are related to the analysis of hazards and hazardous materials impacts. Many studies reviewed by the Task Force are discussed in the summaries below, and the Task Force report includes a complete listing of all literature reviewed.

While the Task Force recommended that the SFRPD continue to review literature and new studies as they become available, the primary conclusions and recommendations of each study group are discussed below, followed by a summary of additional research reviewed since completion of the Task Force recommendations. The Commission approved the recommendations of the Task Force on October 2, 2008.

Material Composition—Overall Chemical Composition and Flammability

The study group for the analysis of synthetic turf composition reviewed two 2007 studies commissioned by the SFE, titled “Synthetic Turf Versus Natural Turf for Playing Fields” and “Occurrence of Bromine, Lead, and Zinc in Synthetic Turf Components,” by Philip Dickey, Staff Scientist for the Washington Toxics Coalition. The study group also researched relevant scientific literature and public reports, and made requests for information from various manufacturers of 22 synthetic turf products (12 manufacturers). In addition, they referred to the 2007 OEHHA study evaluating the health effects of recycled waste tires in playground and track products. A summary of the findings and recommendations of this study group is as follows:

- Testing by the Washington Toxics Coalition showed substantial lead levels in two products, especially in the nylon thread that is encapsulated inside the polyethylene yarn. Although the presence of lead in padding or other layers below the turf may not present a risk to users of the turf, because it would not be accessible to the users, the study group recommended that SFRPD avoid purchasing turf products containing lead (i.e., nylon products). The study group for the analysis of the lead content of synthetic turf products came to this same conclusion.
- Testing by the Washington Toxics Coalition showed that zinc was present in infill materials and the Task Force recommended that SFRPD minimize the potential for zinc hazards by selecting manufacturers that use infill materials not containing zinc, when feasible.
- Testing by the Washington Toxics Coalition showed that brominated flame retardants are not present in the synthetic turf brands tested except for a limited amount in the shock pad for one product.

- Known fires have occurred on two playgrounds with synthetic turf with loose-fill crumb rubber. Both fires were intentionally started by juveniles who used matches, paper, and wood to ignite the crumb rubber. The spread of flames was slow, and no one was injured. The flash point (the temperature at which the material will ignite) and auto-ignition data suggest that the flammability hazard associated with synthetic turf is minimal, and most manufacturers claim that their synthetic turf product is nonflammable based on the ASTM D 2859 Flammability Test. However, this test relies on a point ignition source, which would understate flammability hazards from arsonists. Given the incidents of arson fires in playgrounds using synthetic turf fields with rubber infill, the Task Force report states that synthetic turf fields should be considered potentially flammable⁸⁶ and recommended that SFRPD request Material Safety Data Sheets from turf providers include information with regard to the flammability of the turf materials and obtain an opinion or review of the flammability of synthetic turf from the San Francisco Fire Department.
- When purchasing new synthetic turf products, SFRPD should request full material composition disclosures and share them with SFDPH and SFE for feedback.

Material Composition—Off-Gassing

The study group for the analysis of off-gassing from synthetic turf products reviewed the following:

- The 2001 to 2003 Building Materials Emissions Study conducted by the California Department of Health Services
- Air measurements above outdoor synthetic football fields in two high schools in New York State by J.C. Broderick & Associates
- The Moretto study performed for the synthetic turf industry
- The study of air quality over four outdoor soccer pitches made from synthetic turf by the National Institute for Public Health and the Environment (Netherlands)

Based on their review, the study group concluded that there have been few studies that have analyzed the air above synthetic turf fields for VOCs and particulates. Based on the largest available study at the time, which was conducted in Norway, the measured levels of chemicals and particulates above the fields would not result in adverse health effects in the players using the fields. However, there are substantial uncertainties in the study because not all of the chemicals present in synthetic turf were analyzed, and not all of the identified chemicals have health-based screening levels. Based on this, the study group recommended further study to

⁸⁶ SFRPD staff indicate that the two known incidents of fires in playgrounds using synthetic turf fields with rubber infill have been arson fires with burnt/melted areas limited to the point source location.

evaluate whether recycled tire infill is a pollution source and if off-gassing from these materials could result in adverse health effects to field users in outdoor applications.

Material Composition—Ingestion—Inhalation of Turf Product Materials

The study group for the analysis of ingestion and inhalation of chemicals in synthetic turf products reviewed three studies by OEHHA for the California Integrated Waste Management Board. These studies included a literature search, an experiment to mimic ingestion by a young child, and an experiment to mimic chronic hand-to-surface-to-mouth activity. A summary of the findings and recommendations of this study group is as follows:

- Data are not available for many of the chemicals that would be released in an outdoor setting. Based on one study from the Netherlands, concentrations of nitrosamine (a carcinogen) measured over four outdoor soccer pitches would not pose an inhalation health hazard to users of the synthetic turf pitches.
- Tire shreds used as playground safety surfaces emitted 13 metals and 11 organic chemicals in an indoor setting, but exposure modeling indicated that the concentrations emitted would not result in adverse health effects via inhalation in an outdoor setting. However, not all of the low-level chemicals were identified, and chemical releases from crumb rubber would likely be greater than those from tire shreds because the ratio of surface area to weight is greater for crumb rubber.
- Increased risk levels associated with a one-time ingestion of 10 grams of tire shreds by a child were within acceptable levels in the 2007 OEHHA study, as discussed above.
- Available literature at the time that the Task Force report was published did not address risks associated with particulate inhalation. Accurate measurements of particulate matter over synthetic turf applications are necessary to more fully and accurately assess potential health risks to field users resulting from particulate emissions.

Turf Products: Alternative Field Products

The study group for the analysis of alternative field products considered interviews and product information from numerous turf manufacturers over a period of 2 years, searched the internet for alternative products and manufacturers, and contacted other municipalities and schools to inquire about field types and experiences. The study group found that at the time, approximately 45 companies were selling turf products or individual components, all with similar product types exhibiting minor variations. The variations included differences in fiber design and profile, length, or combination of materials (polyethylene or nylon); backing design; infill type; sub-turf

pads; and drainage systems. The study group discovered the following, related to various turf components:

- **Fiber material:** All fiber material is made of polyethylene or nylon or a combination of the two.
- **Infill:** Most companies use all rubber (typically a polymer rubber called styrene-butadiene rubber, or SBR, and in some cases, recycled tires) or a combination of rubber and sand as their primary infill product. Although there are alternative infill products available, most companies believe that rubber is the best infill product on the market because it has been field tested and proven for performance.
- **Backing material:** Backing material is made of various layers of geotextile fabric layers with various binding and gluing styles. Some turf companies that use no infill or alternative infill products require a resilient backing material to prevent compaction, as well as to meet fall-attenuation requirements. At the time of the Task Force report, there appeared to be only one company that indicated that they had an active recycling component/program associated with their turf product, and the study group recommended that further evaluation was required.

The study group for alternative field products also noted that the turf industry is an extremely volatile market, with many companies emerging and failing on a regular basis. Because of this, the group recommended that in addition to selecting the most appropriate product for the intended use, the choice of vendor for the product should consider the fiscal status, experience, location, continued customer service, warranty, and recycling program of the vendor. Feedback should be requested from others using new products, instead of relying on manufacturers' information regarding quality and performance of synthetic turf products, including New York and New Jersey.

Turf Products: Recyclability

The study group for recyclability conducted interviews with synthetic turf manufacturers and distributors to evaluate the recyclability of synthetic turf products. The group noted that synthetic turf fields are expected to have a lifetime of 12 years or more, and once worn down, they would require replacement. Replacement of an 80,000-square-foot field would produce approximately 400 tons of debris. Unless an alternative solution was identified, the material would need to be landfilled, using up valuable landfill space and resulting in substantial disposal costs. At the time of the Task Force report, only one company recycled synthetic turf products, although several companies were developing programs both to reclaim synthetic turf

products at the end of their useful life and use materials containing post-consumer recycled content in their new products. All of the synthetic turf vendors contacted expressed a willingness to commit their companies to end-of-life recycling for their products. The study group recommended that SFRPD choose vendors willing to guarantee that their synthetic turf materials will be recycled to the highest and best use at the end of their useful life, and that the purchased turf materials contain post-consumer recycled content when possible, consistent with CCSF Ordinance 53-07—Use of Recycled Materials. The study group also recommended that SFRPD work with the SFE to continue encouraging synthetic turf manufacturers to initiate and implement recycling programs for used turf.

Recommendations of the Task Force

Based on extensive review and analysis of available literature, the Task Force emphasized the following recommendations to SFRPD:

- Explore synthetic turf infill alternatives to SBR rubber,
- Meet with the California Environmental Protection Agency (CalEPA) and SFDPH to determine the feasibility of conducting further studies on ingestion exposure,
- Use a criteria-driven site selection process, and
- Do not purchase synthetic turf products with lead.

2009 Office of Environmental Health Hazard Assessment Study

In 2009, OEHHA published a report assessing the health effects associated with chemicals measured in the air above synthetic turf fields.⁸⁷ The report, titled *Chemicals and Particulates in the Air above the New Generation of Artificial Turf Playing Fields, and Artificial Turf as a Risk Factor for Infection by Methicillin-Resistant Staphylococcus Aureus (MRSA), Literature Review and Data Gap Identification*, discussed the results of five studies that measured chemical and/or particulate concentrations above synthetic turf fields and three studies that analyzed gaseous emissions from tire-derived crumb rubber in a laboratory setting. The study included a human health risk evaluation to assess the increased lifetime cancer risk and risk of developmental/reproductive

⁸⁷ Office of Environmental Health Hazard Assessment, *Chemicals and Particulates in the Air above the New Generation of Artificial Turf Playing Fields, and Artificial Turf as a Risk Factor for Infection by Methicillin-Resistant Staphylococcus Aureus (MRSA), Literature Review and Data Gap Identification*, July 2009, available online at: <http://www.calrecycle.ca.gov/Tires/Products/BizAssist/Health/TurfStudy/LitReview.doc>, accessed on March 28, 2011.

toxicity resulting from inhalation of VOCs and PAHs by soccer players, ages 5 to 55 years, playing on synthetic turf with tire-derived infill.

The most complete data set was from a study of indoor stadiums conducted in 2006. Using the highest concentrations detected, OEHHA calculated the increased lifetime cancer risk from inhalation for the eight potential carcinogens identified in that study. The risk evaluation concluded that five of the eight chemicals were associated with an increased cancer risk above the *de minimis* level of 1 in 1,000,000: benzene, formaldehyde, naphthalene, nitro methane, and styrene. The increased cancer risk associated with these compounds ranged from 1.6 in 1,000,000 for formaldehyde to 8.7 in 1,000,000 for nitromethane. The risk evaluation also states that two of the chemicals identified in the 2006 Norway study are known to cause developmental/reproductive toxicity: benzene and toluene. However, the chemical intake of these compounds via field air was well below the maximum allowable dose level for each chemical.

The measured chemical concentrations of the 2006 study may be higher than would occur outdoors because the samples were obtained from indoor fields where air dispersion would not be as great. Further, the height of the sampling was not documented, and no background samples were collected to demonstrate whether the observed chemical concentrations resulted from the synthetic turf, or could be representative of background conditions. Regardless, the OEHHA study concluded that further studies of the chemicals present above synthetic turf fields is warranted.

2010 California Department of Resources Recycling and Recovery Study

In 2010, the California Department of Resources Recycling and Recovery (CalRecycle) published a report assessing the human health risks posed by VOCs and particulates in the air above outdoor synthetic turf fields containing recycled crumb rubber infill. The report documenting this study is titled *Safety Study of Artificial Turf Containing Crumb Rubber Infill Made from Recycled Tires: Measurements of Chemicals and Particulates in the Air, Bacteria in the Turf, and Skin Abrasions Caused by Contact with the Surface*.⁸⁸ The report was produced under contract by OEHHA.

⁸⁸ California Department of Resources Recycling and Recovery, *Safety Study of Artificial Turf Containing Crumb Rubber Infill Made from Recycled Tires: Measurements of Chemicals and Particulates in the Air, Bacteria in the Turf, and Skin Abrasions Caused by Contact with the Surface*. October 2010, available online at: <http://sfrecpark.org/documents/item12PlayfieldsInitiativeUpdateAttachmentOEHHAStudy022011.pdf>, accessed on March 28, 2011.

For the evaluation of VOCs, OEHHA conducted air sampling at a height of 4 feet above four synthetic turf athletic fields in California's Central Valley (one of which was actually in San Francisco), as well as at nearby grass turf fields for comparison purposes. The fields were sampled on multiple summer days, at times ranging from the cool early morning to the heat of the day in the afternoon. The age of the synthetic fields sampled ranged from 8 months to 5 years. Sampling for VOCs above the outdoor synthetic turf fields identified few VOCs, and none were consistently identified in all of the eight air samples collected per field. Further, none of the concentrations were consistent between the four fields sampled. However, comparison of the sampling results for the synthetic turf to the results for the grass turf suggests that seven VOCs originated from the synthetic turf, including 2 propanol, cyclohexane, toluene, m,p,o-xylenes, isopropylbenzene, 4-ethyltoluene, and 1,2,4-trimethylbenzene.⁸⁹ A human health risk evaluation was conducted for these seven VOCs, and concluded that all exposures were below noncancer, health-based screening levels. None of the seven VOCs are known to cause cancer, and therefore cancer risks were not evaluated. Although synthetic turf field temperatures increased from 34 to 55 degrees Fahrenheit over the course of the day, there was no correlation between the surface temperature and the VOCs detected above the synthetic turf fields.

For the evaluation of particulates, OEHHA sampled the air above three San Francisco Bay Area synthetic turf fields for 3 hours during active field use (soccer practice); and for comparison purposes, ambient air was sampled upwind of each field during a consecutive 3-hour period. Each field and upwind location were sampled on two consecutive days, yielding two field samples and two upwind samples per field. PM_{2.5} concentrations and associated metals concentrations were determined for each sample. For two of the fields, the weight of PM_{2.5} was less than detection limits and for the third field, the weight of PM_{2.5} was similar in the sample from above the field and from upwind of the field. Samples from two fields that were analyzed for elements contained sodium, calcium, potassium, chlorine, and sulfur, and the concentrations were similar in the samples collected from above the field and upwind of the field. Other elements, including heavy metals, were not detected in any of the air samples. On the basis of these results, there is no public health concern related to particulate matter or heavy metals associated with particulate matter at the synthetic fields. The oldest field sampled was 26 months at the time of sampling.

⁸⁹ The criteria that suggest a VOC could result from synthetic turf include: 1) detection in at least two of the eight air samples collected from above a synthetic turf field, and 2) detection at a higher average concentration above that synthetic turf field compared with a nearby natural turf field.

Although the risk evaluation did not identify health risks associated with VOC and particulates above the synthetic turf fields, the risk evaluation did not consider certain variables that could affect the generation of VOCs and particulates at synthetic fields, including field age, method of processing the tire rubber, and the source of the tire stocks.

New York State Studies

The New York State Department of Environmental Conservation conducted a series of studies to assess potential impacts from crumb rubber infill material in synthetic turf fields, including the potential for release of pollutants into the air. The studies included laboratory analysis of crumb rubber material, and sampling of air at two turf fields in New York City. The New York State Department of Health assessed the air quality monitoring survey data for public health effects. The report, released in 2009, is titled *An Assessment of Chemical Leaching, Releases to Air and Temperature at Crumb-Rubber Infilled Synthetic Turf Fields*.

Laboratory analysis for the presence of VOCs and SVOCs caused by off-gassing of crumb rubber samples proved difficult to conduct quantitatively but did provide information regarding additional chemicals to be analyzed in the ambient-air field investigation. Air sampling at the two turf fields during active play detected low concentrations of chemicals anticipated to be found based on previous sampling; however, most of these chemicals were also detected in the upwind, background locations and could not conclusively be associated with emissions from the turf field. Regarding particulate matter, data from this study did not indicate a meaningful difference between upwind and downwind measurements.

Even though the chemical concentrations above the field were similar to upwind concentrations, the ambient-air sampling results were used to evaluate the public health risks of volatile air contaminants and particulate matter. Potential noncancer risks from target chemicals were below hazard quotients for all chemicals and generally well below a value of 1 (i.e., did not exceed the reference concentrations used to evaluate noncancer health risks). Potential cancer risks exceeded the target of 1 in 1,000,000 for four chemicals: benzene and three forms of pentadiene. However, the estimated risks of the on-field samples were similar to those for the upwind, background samples and could not be attributed to turf emissions. One analyte not detected in upwind samples, 2-methyl-1,3-butadiene, was reported in one of the eight downwind samples at a concentration exceeding the 1-in-1,000,000 cancer risk value. The New York State Department of

Health concluded that because there was no consistent pattern in the measurements of the chemicals at either field and exposures would not be continuous, there was not a public health concern regarding cancer effects.

See Section E.15, Hydrology and Water Quality, for a summary of findings from this study related to water quality.

Connecticut Studies

In 2010, five Connecticut agencies under a joint agreement completed a study of synthetic turf fields to assess health and environmental risks from off-gassing and leaching of chemicals in crumb rubber materials. The components of the study included the following:

- Measurement of air concentrations of approximately 200 chemicals at 5 fields during active play,⁹⁰
- Performance of a human health risk assessment based on measured air concentrations,⁹¹
- Measurements of off-gassing and leaching of chemicals under defined laboratory conditions,⁹²
- Measurements of leaching of metals in stormwater runoff from turf fields,⁹³ and
- Peer review by an expert panel.⁹⁴

The findings related to human health risks are discussed below, and the findings related to leaching are discussed in Section E.15, Hydrology and Water Quality.

Ambient air sampling was performed at four outdoor turf fields, one indoor turf field, and at upwind background locations near each field in July 2009. In addition, bulk samples of crumb rubber from each field were collected. The samples were analyzed for VOCs, SVOCs, rubber-

⁹⁰ University of Connecticut Health Center, *Artificial Turf Field Investigation in Connecticut, Final Report*, July 27, 2010, available online at: http://www.ct.gov/dep/lib/dep/artificialturf/uchc_artificial_turf_report.pdf, accessed on March 30, 2011.

⁹¹ Connecticut Department of Public Health, *Human Health Risk Assessment of Artificial Turf Fields Based Upon Results from Five Fields in Connecticut*, July 28, 2010, available online at: http://www.ct.gov/dep/lib/dep/artificialturf/dph_artificial_turf_report.pdf, accessed on March 30, 2011.

⁹² Connecticut Agricultural Experimental Station, *2009 Study of Crumb Rubber Derived From Recycled Tires*, Final Report, revised May 4, 2010, available online at: http://www.ct.gov/dep/lib/dep/artificialturf/caes_artificial_turf_report.pdf, accessed on March 30, 2011.

⁹³ Connecticut Department of Environmental Protection, *Artificial Turf Study, Leachate and Stormwater Characteristics Final Report*, July 2010, available online at: http://www.ct.gov/dep/lib/dep/artificialturf/dep_artificial_turf_report.pdf, accessed on March 30, 2011.

⁹⁴ Connecticut Academy of Science and Engineering, *Committee Report: Peer Review of an Evaluation of the Health and Environmental Impacts Associated with Synthetic Turf Playing Fields*, June 15, 2010, available online at: http://www.ct.gov/dep/lib/dep/artificialturf/case_artificial_turf_review_report.pdf, accessed on March 30, 2011.

related chemicals (e.g., benzothiazole), and PM₁₀. To identify which chemicals were attributable to the turf rather than background sources of air pollution, results were screened to include only those chemicals identified in the crumb rubber samples and those with concentrations 2 times greater than the background samples (VOCs and SVOCs were present in all background samples). Based on these criteria, four VOCs were identified as associated with turf emissions. Elevated PM₁₀ concentrations were not identified. VOC concentrations varied among the fields. The air concentration of methyl isobutyl ketone (35.98 micrograms per cubic meter of air [$\mu\text{g}/\text{m}^3$]) was the highest VOC detected in samples collected on the turf, followed by acetone (23.71 $\mu\text{g}/\text{m}^3$), toluene (2.3 $\mu\text{g}/\text{m}^3$), and ethylbenzene (1.04 $\mu\text{g}/\text{m}^3$). Of the five targeted SVOCs in air, benzothiazole and butylated hydroxytoluene (BHT) were the only chemicals detected above background. Most concentrations of benzothiazole and BHT were an order of magnitude lower among the outdoor turf fields (ranging from less than 80–130 nanograms per cubic meter of air [ng/m^3]) than the indoor turf field, where benzothiazole concentrations up to 14,000 ng/m^3 were detected.

The Connecticut Department of Public Health reviewed the air sampling data to identify chemicals coming from the turf field and included a wider range of chemicals for its study. It analyzed those constituents found to be 25 percent higher on the field than upwind, for a total of 27 chemicals. The health risk assessment analyzed exposure scenarios for children ages 6 to 18 and for adults under indoor and outdoor field types. The assessment assumed exposure to turf fields 3 hours per day, 4 days per week, for 8 months per year at the maximum concentrations detected in the field air sampling results. Toxicity values were taken from national databases or derived by staff. The study concluded that the cancer risks were only slightly above *de minimis* levels of 1 in 1,000,000 for all scenarios evaluated, including children playing at the indoor facility, the scenario with the highest exposure. The calculated risks were reported to be within typical risk levels from ambient pollution sources and below target risks associated with many air toxics regulatory programs. Chronic noncancer risks were not elevated above a hazard index of 1; for acute risk, the hazard index was close to 1 for children playing at the indoor field. The main contributor to this hazard index was benzothiazole, a rubber-related SVOC, which creates uncertainty regarding the potential for benzothiazole and other volatile irritants to create an irritation response in sensitive individuals playing indoors. The study concluded that outdoor and indoor synthetic turf fields are not associated with elevated health risks, but recommended

that adequate ventilation be provided at indoor field facilities to prevent accumulation of VOCs and SVOCs in indoor air.

See Section E.15, Hydrology and Water Quality, for a summary of findings from this study related to water quality.

Bainbridge Island Evaluation

An evaluation conducted on behalf of the Bainbridge Island Metro Parks and Recreation District and the Bainbridge Island School District in Washington State used available scientific literature to provide an assessment of potential human health risks associated with use of synthetic turf containing tire crumb.⁹⁵ The risk assessment used the highest concentrations of chemicals identified in tire crumb material to assess potential risks to children, age 8 to 10, and teenagers, age 11 to 18 years. For both age groups, the assessment addressed health risks via dermal contact with tire crumb leachate, inhalation of VOCs, and ingestion of whole tire particles as a result of 3 hours of play per day for 261 days per year (year-round play). None of the estimated cancer risks exceeded *de minimis* excess cancer risk of 1 in 1,000,000, and the combined noncancer hazard index for each chemical was a maximum of 0.05, far below the threshold of 1.

San Francisco Synthetic Turf Standards

In accordance with the findings of the Task Force discussed above, SFRPD developed synthetic turf standards in 2009 to address the required composition of synthetic turf products used in San Francisco, as well as the post-consumer recycled content of the new turf products purchased and recyclability of used turf products at the end of their useful life.⁹⁶ In accordance with these standards, the SFRPD requires potential vendors to provide the information discussed below when submitting project bids, and any bids with incomplete information or insufficient data are rejected. These standards were used to purchase synthetic turf for the Kimbell Playground in 2010 and Mission Playground field renovations in 2011.

⁹⁵ Winward Environmental LLC. Initial Evaluation of Potential Human Health Risks Associated with Playing on Synthetic Turf Fields on Bainbridge Island, available online at: http://sf-recpark.org/ftp/uploadedfiles/wcm_recpark/SPTF/Binder/6_Study_Synthetic_Turf_on_Bainbridge_Island.pdf, accessed on March 30, 2011.

⁹⁶ City and County of San Francisco Recreation and Park Department, *Synthetic Turf Standards Information Only*. July 8, 2009, available online at: <http://www.scparks.com/pdfs/Synthetic%20Turf%20Standards.pdf>, accessed on March 30, 2011.

Turf Composition

The SFRPD requires potential vendors to submit a product analysis with their project bids, quantifying the metals and SVOC content of their product. These analyses must be provided for the turf fiber, infill material, backing, and underlayment. All samples must be analyzed for SVOCs and the list of metals specified in Title 22 of the California Code of Regulations (CCR) for which waste classification criteria have been established (see “Waste Classification Criteria,” below, for a discussion of regulations regarding the classification of wastes). In addition, infill samples must be analyzed for leachable concentrations of lead, zinc, total chromium, and any metals for which the total concentration is equal to or greater than 10 times the Soluble Limit Threshold Concentration (STLC).⁹⁷ Analytical methods for SVOCs and metals are specified in the synthetic turf standards, and submittals from the vendor must include certified laboratory reports documenting the analytical methods and results.

The synthetic turf standards specify maximum levels for total chromium, lead, and zinc in SBR infill materials and non-SBR infill materials. Maximum levels for total chromium and lead are also specified for fibers, backing, and underlayment. The standards specify maximum allowable levels of these metals along with the corresponding Total Threshold Limit Concentration (TTLC), which is used to classify a hazardous waste; the corresponding Residential Environmental Screening Level (ESL) and California Human Health Screening Level (CHHSL), which are used by the Regional Water Quality Control Board (RWQCB) and CalEPA for screening contaminant levels in soil (see “Environmental Screening Levels” and “California Human Health Screening Levels,” below, for a discussion of these screening levels).

The maximum total chromium concentration in SBR and non-SBR infill materials is 750 milligrams per kilogram (mg/kg), the maximum lead concentration is 50 mg/kg, and the maximum zinc concentration is 23,000 mg/kg. For fibers, backing, and underlayment, the maximum total chromium concentration is 25 mg/kg, and the maximum lead concentration is 50 mg/kg.

For total chromium and lead, these maximum concentrations are all equal to or less than the TTLC and the residential ESL and CHHSL. While zinc standard is higher than the residential ESL

⁹⁷ The California Waste Extraction Test, used to determine the soluble concentration of a substance under state regulations, involves a 10-to-1 dilution of the sample. Therefore, the total concentration of a substance would need to exceed 10 times the STLC for the soluble concentration to possibly exceed the STLC in the extract.

established by the RWQCB, it is equal to the equivalent CHHSL established by CalEPA, and exposure to this level of zinc in the SBR material should not cause adverse health effects because the zinc is tightly bound in the recycled tire material. Further, the residential exposures considered in the development of the ESL and CHHSL are based on a much longer exposure period than would occur due to regular play on a synthetic playfield. Although the zinc criteria is higher than the TTLC, disposal requirements for the synthetic turf would be similar to disposal requirements for used tires, and disposal as a hazardous waste should not be required.

The synthetic turf standards also specify maximum levels for soluble chromium, lead, and zinc in SBR infill materials and non-SBR infill materials. For both categories of infill materials, the maximum soluble concentration of chromium is 0.05 milligrams per liter (mg/L) and the maximum soluble concentration of lead is 0.0025 mg/L. The maximum concentration of soluble zinc in SBR infill is 250 mg/L and the maximum concentration in non-SBR infill materials is 0.081 mg/L. The standards specify maximum levels along with ESLs for groundwater that is a current or potential drinking water source, drinking water maximum contaminant levels for each metal, and the STLC and federal regulatory levels for classification of hazardous wastes based on soluble metals concentrations (see "Environmental Screening Levels," "Drinking Water Standards," and "Waste Classification Criteria," below, for a discussion of these criteria). For chromium and lead, these maximum concentrations are all equal to or less than the criteria identified. In addition, the turf standards require that none of the total metals concentrations can exceed the TTLC, and none of the soluble metals concentrations can exceed the federal regulatory level or the State STLC. Although the zinc standard for SBR infill is higher than the drinking water MCL, the Waste Extraction Test used to determine the soluble concentration for waste disposal purposes uses an acidic solution which is more aggressive at dissolving constituents from a material than water, and is not necessarily representative of the zinc concentration that could dissolve into water as a result of stormwater runoff or leachate through the field.

Although the synthetic turf standards require analysis of the turf materials for SVOCs, they are required for reference only, and the turf standards do not require comparison to any specific criteria. The minimum semi-volatile constituents to be reported are aniline, phenol, and benzothiazole.

Potential vendors are also required to submit verification that brominated flame retardants have not been added during the manufacture of the turf fiber, infill, backing, or underlayment

materials. Verification can take the form of a signed letter from the manufacturer or appropriate analysis of the product, demonstrating that elemental bromine levels are less than 1 percent by weight.

Post-Consumer Recycled Content

The synthetic turf standards require that synthetic turf purchased by CCSF will include recycled content to the maximum extent feasible. To demonstrate compliance with this requirement, vendors must provide the type and amount of recycled content in their turf product. Vendors that do not use recycled content must provide an explanation of why and must describe plans for inclusion of recycled content in the future.

End-of-Life Recycling Plans

The synthetic turf standards require that vendors provide detailed plans for the management of all turf components at the end of their useful life. These plans must include:

- The manner of reuse/recycling for each turf component,
- Identification of parties responsible for the removal and disposal of field products,
- A description of the reuse or recycling process, and
- A signed commitment guaranteeing implementation of the plan within 7 years of contract ratification.

In addition, the synthetic turf standards specify that incineration, or any other type of high-temperature conversion technology, cannot be used for disposition of the used turf products, and that these products may not be used as Alternate Daily Cover at a permitted landfill facility.

Evaluation of San Francisco Synthetic Turf Installations

In August 2009, samples were collected from four synthetic fields with SBR material infill in San Francisco, including the Franklin Square Playground, Garfield Square Park, South Sunset Playground, and Youngblood-Coleman Playground.⁹⁸ Sampling at each field included collection of two wipe samples each from green and white turf materials; one turf fiber sample each from green and white striped turf; and one sample of infill material. Because turf fibers are not

⁹⁸ Conestoga-Rovers & Associates. Results of Laboratory Analytical Testing Artificial Turf Field City Fields Foundation. August 26, 2009.

expected to be directly ingested by field users, wipe samples were used to evaluate the amount of lead in dislodgeable dust that could be picked up by children's hands and inadvertently digested. A discussion of the sampling is as follows:

- Wipe samples were collected from green and white turf materials using a methodology that the Consumer Products Safety Commission used to evaluate potential lead exposure from synthetic turf fields.⁹⁹ The samples were analyzed for lead and the detected concentration ranged from 0.73 µg/wipe to 4.0 µg/wipe. There was no substantial variation between the concentration of lead detected in wipe samples from the two colors of turf. The Consumer Products Safety Commission uses a level of 10 micrograms per deciliter (µg/dL) of lead as a level of concern with respect to lead poisoning. Based on this level, the Commission suggests that as a guideline, the chronic ingestion of lead from consumer products should not exceed 15 µg/day. When adjusted for the amount of lead that could be ingested, the daily intake of lead at the four San Francisco fields would range from 0.078 µg/day to 0.40 µg/day, which is well below the 15 µg/day limit recommended by the Consumer Products Safety Commission.
- Samples of green and white turf fiber materials were collected by clipping the turf blades, and the samples were analyzed for 23 metals. With the exception of cobalt and zinc in one sample of green fiber, none of the detected metals concentrations exceeded hazardous waste criteria or the ESL or CHHSL. In one green fiber sample from the Franklin Square Playground, the cobalt concentration was 49 mg/kg which slightly exceeds the residential ESL of 40 mg/kg. The zinc concentration in this sample was 7,400 mg/kg which exceeds the TTLC of 5,000 mg/kg and the ESL of 600 mg/kg. None of the other metals concentrations in this sample exceeded hazardous waste criteria or ESLs or CHHSLs. Chromium concentrations in the samples from all fields ranged from not detected to 4.3 mg/kg; lead concentrations ranged from not detected to 8.7 mg/kg; and zinc concentrations ranged from 50 to 7,400 mg/kg. All of these concentrations are below the limits specified for fiber materials in the CCSF synthetic turf standards described above.
- Infill samples were analyzed for 23 metals. With the exception of cobalt and zinc, none of the detected metals concentrations exceeded hazardous waste criteria or the ESL or CHHSL. The cobalt concentrations in the infill samples ranged from 83 mg/kg to 160 mg/kg, all of which exceed the residential ESL of 40 mg/kg. The zinc concentration in the infill samples ranged from 11,000 mg/kg to 16,000 mg/kg, and all values exceed the TTLC of 5,000 mg/kg and the ESL of 600 mg/kg. Chromium concentrations in the samples from all fields ranged from not detected to 1.2 mg/kg; lead concentrations ranged from 8 mg/kg to 14 mg/kg. All of the chromium, lead, and zinc concentrations are below the limits specified for SBR infill materials in the CCSF synthetic turf standards described above.

⁹⁹ Consumer Products Safety Commission. CPSC Staff Analysis and Assessment of Synthetic Turf "Grass Blades". July, 2008.

In July 2009, wipe samples were also collected from two synthetic fields with SBR infill in San Francisco, including the field at Crocker Amazon Playground and the Silver Terrace Playground using the methodology described above.^{100,101} Based on the analytical results (when adjusted for the amount of lead that could be ingested), the daily intake of lead at the two San Francisco fields would be 0.10 µg/day to 0.74 µg/day at the Crocker Amazon Playground and 0.21µg/day to 0.24µg/day at the Silver Terrace Playground, all of which are well below the 15 µg/day limit recommended by the Consumer Products Safety Commission.

As described in the Project Description, the synthetic turf would consist of four components: fiber, infill, backing, and underlayment. The fiber, which would consist of polyethylene, would be grass-like in appearance. The infill, which would be used to provide stability, would be comprised of about 70 percent styrene butadiene rubber (SBR) and 30 percent sand. The SBR infill is recovered from scrap tires and from the tire re-treading process. The fiber and infill would be supported by a backing made up of a combination of permeable woven and un-woven polypropylene fabrics that provide strength and vertical drainage. Underlayment would consist of drainage tile or an aggregate rock base. As discussed above, SBR is known to contain a number of VOCs, SVOCs (including benzothiazoles, aniline, and phenols), and metals (including barium, chromium, lead, manganese, and zinc).

Impacts related to the routine use of the synthetic turf would be significant if the use resulted in adverse health effects due to inhalation of vapors and particulates from the synthetic turf, ingestion of the synthetic turf, dermal contact with the synthetic turf materials, or inappropriate use of detergents and disinfectants to maintain the field. Impacts related to routine disposal of hazardous materials could occur because the turf requires disposal or recycling at the end of its useful life. Each of these potential impacts is discussed below.

Inhalation of Vapors and Particulates

Several studies, described above, evaluated health risks associated with inhalation of vapors above synthetic turf containing SBR. The 2009 OEHHA study concluded, based on data from an indoor field, that the increased cancer risk would be 1.6 in 1,000,000 for formaldehyde and 8.7 in 1,000,000 for nitromethane. However, these risk numbers could be higher than would occur for

¹⁰⁰ Conestoga-Rovers & Associates. Results for Laboratory Analytical Testing Artificial Turf Fields, Silver Terrace Field, San Francisco, CA. July 10, 2009.

¹⁰¹ Conestoga-Rovers & Associates. Results for Laboratory Analytical Testing Artificial Turf Fields, Crocker Amazon Field, San Francisco, CA. July 10, 2009.

an outdoor application, such as the Minnie and Lovie Ward Playfields, because the measured chemical concentrations of the 2006 study were obtained from indoor fields where air dispersion would not be as great. Further, the height of the sampling was not documented, and no background samples were collected to demonstrate whether the observed chemical concentrations resulted from the synthetic turf or could be representative of background conditions.

The 2009 New York State study of two turf fields in New York City did not detect an increase of volatile organic vapors above background levels, with the exception of 2-methyl, butadiene in one of the eight samples. The increased cancer risk level would be 8 in 1,000,000 for this chemical. The New York State Department of Health noted that, because it was not consistently detected in the air samples and exposures were not continuous, there was no public health risk resulting from exposures to turf materials.

The 2010 study by the Connecticut identified six volatile or semi-volatile chemicals as associated with turf emissions: methyl isobutyl ketone, acetone, toluene, ethylbenzene, benzothiazole, and BHT. The Connecticut Department of Public Health performed a risk assessment for a total of 27 chemicals and concluded that the cancer risks were only slightly above *de minimis* levels for all scenarios evaluated, including children playing at the indoor facility, the scenario with the highest exposure. The calculated cancer risks were reported to be within typical risk levels from ambient pollution sources. The hazard index for acute risk was close to 1 for children playing at the indoor field, primarily due to benzothiazole. The presence of benzothiazole and other VOCs could create an irritation response in sensitive individuals playing indoors. The study concluded that outdoor and indoor synthetic turf fields are not associated with elevated health risks, but recommended that adequate ventilation be provided at indoor field facilities to prevent accumulation of VOCs and SVOCs in indoor air.

The 2010 study by CalRecycle concluded that inhalation exposures to the seven VOCs that could be attributable to the synthetic turf were less than health-based screening levels, and no correlation existed between the field temperature and the VOCs detected in the air space above the field. The 2010 study by CalRecycle also evaluated the risks associated with particulates in the air space above three fields during active play. The risk assessment found that PM_{2.5} was not detected in the air space above two of the fields. At the third, the weight of the PM_{2.5} in the sample from above the synthetic turf field was the same as the weight in the upwind sample,

indicating no contribution from the field. In addition, heavy metals were not detected in any of the samples. Neither the 2009 New York nor the 2010 Connecticut study identified an increase in PM₁₀ particulates in the air space above turf fields. PM₁₀ concentrations were typical of background levels.

The Bainbridge Island evaluation concluded that none of the estimated cancer risks for inhalation exceeded *de minimis* excess cancer risk of 1 in 1,000,000 and noncancer risks did not exceed the hazard index of 1.

On the basis of the above results, impacts related to the inhalation of vapors and particulates in the air space above a synthetic turf field would be less than significant because evidence does not support a conclusion of increased health risk.

Ingestion of Synthetic Turf Products

The 2007 OEHHA study, described above, assessed the health risks resulting from ingestion of shredded tires, which are similar to tire-derived SBR material. The study found that the noncancer hazard index associated with a one-time ingestion of a 10-gram piece of shredded tire would be 6.9 when all metals considered in the risk analysis are accounted for, but would be reduced to 1.8 when zinc is excluded. The study stated that at most, gastrointestinal distress would occur resulting from ingestion of zinc at the calculated level. The increased cancer risk was 1.2 in 10,000,000, considerably less than the *de minimis* level of 1 in 1,000,000.

OEHHA concluded that under the gastric simulation (considered more representative of actual conditions), the hazard index was 2.2, sufficiently close to a hazard index of 1 that the risk was deemed not to represent a serious non-cancer hazard, and the increased cancer risk was 3.7 in 100,000,000, considerably less than the *de minimis* level of 1 in 1,000,000. Regarding ingestion via hand-to-surface-to-mouth activity, OEHHA concluded that all of the chemicals identified were below chronic screening values, and the increased cancer risk was 2.9 in 1,000,000, which, while higher than the *de minimis* level of one in 1,000,000, was determined by OEHHA to be acceptable because of the small magnitude of increased risk.

The Bainbridge Island evaluation concluded that none of the estimated cancer risks for ingestion exceeded *de minimis* excess cancer risk of 1 in 1,000,000, and noncancer risks did not exceed the hazard index of 1.

On the basis of the above results, impacts related to ingestion of synthetic turf would be less than significant.

Dermal Contact with Synthetic Turf Products

The 2007 OEHHA study, described above, found that dermal contact with surfaces comprised of recycled tires would not cause skin sensitization in children, nor would contact with these surfaces be expected to elicit skin reactions in children already sensitized to latex. The Bainbridge Island evaluation concluded that none of the estimated cancer risks for dermal contact exceeded *de minimis* excess cancer risk of 1 in 1,000,000, and noncancer risks did not exceed the hazard index of 1. Based on this, impacts related to dermal contact would be less than significant.

Use of Hazardous Materials for Field Maintenance

As discussed in the Project Description, the athletic fields would be periodically cleaned with a solution of soap and water, but no disinfectants would be used. Although small amounts of solvents and adhesives could be required to make minor repairs, they would not be used in large quantities but only in spot applications at the specific repair location. On the basis of this, impacts related to the use of hazardous materials for field maintenance would be less than significant.

Disposal of Synthetic Turf

Synthetic turf has a life span of approximately 10 to 15 years, and must be replaced at the end of its useful life. However, in accordance with CCSF's synthetic turf standards described under "Synthetic Turf Standards," above, SFRPD would require the vendor for the synthetic turf to provide a detailed end-of-life recycling plan for the ultimate disposition of the turf at the end of its useful life. At a minimum, the plan would specify:

- The manner of reuse or recycling for each turf component and the reuse or recycling process;
- Parties responsible for the removal and disposition of the turf; and
- A signed commitment guaranteeing implementation of the plan within 7 years of contract ratification.

Use of the used synthetic turf for alternative daily cover at a landfill, and use of incineration or other high-temperature conversion technologies to destroy the turf materials, would not be allowed.

The used turf would not be considered a hazardous waste because, in accordance with the synthetic turf standards, the vendor would be required to analyze all of the turf components (fibers, infill, underlayment, and backing) for Title 22 metals. The vendor also would have to demonstrate that none of the total metals concentrations exceed the California TTLC (with the exception of zinc) and analyze the infill materials for soluble metals using the WET procedure, as well as demonstrate that none of the soluble metals concentrations materials exceed the STLC. Although zinc levels could exceed the TTLC, the turf should be able to be disposed of consistently with the management of used tires. The metals to be included in the soluble analysis include lead, zinc, and total chromium, as well as any metal in which the total metals concentration is equal to or exceeds by 10 times the STLC. Although waste classification criteria have not been established for specific SVOC compounds, the synthetic turf standards also require analysis of these compounds for reference purposes. In addition, the vendor would be required to provide verification that brominated flame retardants have not been intentionally added during the manufacture of the turf fiber, infill, underlayment, or backing. The verification would be in the form of a signed letter from the manufacturer or appropriate laboratory analysis of the product, demonstrating that the levels of bromine are less than 1 percent by weight.

Recycling options for used turf materials are currently under development, and continue to evolve as more synthetic turf applications reach the end of their useful life. Currently, spent turf can be recycled for uses such as manufacture of school bags, batting cages, barn mats, top dressing for natural grass, lining for highway barrels and backing for road bases, tote bags, t-shirts, coasters, and park benches.

Because SFRPD would implement the synthetic turf standards, requiring implementation of an end-of-life recycling plan, and would restrict the metals and SVOC concentrations in the turf components, impacts related to the disposal of the used synthetic turf would be less than significant.

Impact HZ-2: The proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. (Less than Significant)

Construction for the athletic fields would include excavation of subsurface soils, which could potentially be contaminated with hazardous substances from releases in the area. A review of available environmental databases maintained by the State Water Resources Control Board (SWRCB) for sites that have been impacted by leaking underground fuel tanks and non-fuel related cases known as Spills, Leaks, Investigative Cleanup (SLIC), was conducted for the project site and the vicinity (DTSC, 2009). EnviroStor, the database of sites overseen by Department of Toxic Substances Control (DTSC), which consists of confirmed hazardous waste and hazardous substance sites in California was also reviewed. Research of the databases revealed no active contaminated sites that coincided with the proposed site. Four Leaking Underground Storage Tanks (LUST) are located within 0.25 mile of the site and each of them has been cleaned up and has obtained a closed status with the State Water Resources Control Board.¹⁰² Sites that are listed as “closed” do not present any potential, direct impact on project activities. Therefore, there are no potential hazards that would result from current or past uses of the site.

Impact HZ-3: The proposed project would emit hazardous emissions or handle hazardous materials within the vicinity of a school. (Less than Significant)

There are two schools located within a quarter mile of the project site: Sheridan Elementary School and Jose Ortega Elementary School, which are located on 431 Capitol Avenue and 400 Sargent Street, respectively. Construction would require the limited use of hazardous materials, such as fuels, lubricants, and cleaning solvents. Storage and use of hazardous materials during construction at the site could result in the accidental release of small quantities of hazardous materials which could degrade soil and groundwater quality, and/or surface water quality in downstream water bodies. The most likely incidents involving these hazardous materials are associated with minor spills or drips. This could result in a significant impact.

As discussed in Section E.15, Hydrology and Water Quality, SFRPD would implement the construction BMPs required by the RWQCB through its review and approval of a stormwater

¹⁰² California Department of Toxic Substances Control, Envirostor Online Database, available online at <http://www.envirostor.dtsc.ca.gov/public/>, accessed on August 2, 2011.

pollution prevention plan (SWPPP). The SWPPP would be implemented to ensure quick response to any spills to avoid impacts to the environment and BMPs would include protection measures for the temporary onsite storage of diesel fuels or other hazardous materials used during construction. The SWPPP would provide the locations for storage of hazardous materials during construction, as well as protective measures, notifications, and cleanup requirements for any incidental spills or other potential releases of hazardous materials. As discussed in Impact HZ-1 above, hazardous materials would be stored, handled and used in accordance with applicable regulations. All equipment and materials storage would need to be routinely inspected for leaks, and records maintained for documenting compliance with the storage and handling of hazardous materials.

As described above, project operation would not require the storage, handling, or disposal of significant quantities of hazardous materials at the project site and would not otherwise include any uses that would include emissions of hazardous substances. Therefore, the proposed project would have a less than significant impact related to hazardous emissions or materials within a quarter of a mile of a school.

Impact HZ-4: The proposed project would not expose people or structures to a significant risk of loss, injury or death involving fires, nor interfere with the implementation of an emergency response plan. (Less than Significant)

There are no very high fire hazards severity zones identified in San Francisco by the California Department of Forestry and Fire Protection (CalFire). Consequently, CalFire has not published a fire hazard severity zone map for San Francisco. However, given the urban character of the project area and its large distance from forested areas and wildlands, risk of wildland fire posing a hazard to the project area would be negligible.

San Francisco ensures fire safety primarily through provisions of the Building and Fire Codes. The final building plans are reviewed by the San Francisco Fire Department (as well as DBI), in order to ensure conformance with these provisions. In this way, potential fire hazards (including those associated with hillside development, hydrant water pressure, and emergency access) would be mitigated during the permit review process.

The CCSF Emergency Response Plan (ERP) addresses the roles and responsibilities of CCSF during emergency response. ERP takes into account all potential hazards when planning for emergencies and therefore encompasses all hazards applicable to CCSF, both natural and man-

made, ranging from planned events to large-scale disaster including, but are not limited to, earthquake, tsunami, flood, and terrorism. Specifically, the ERP identifies and describes CCSFs interaction with regional, State, and Federal entities, the role of the San Francisco Emergency Operations Center, and the coordination that occurs between the Emergency Operations Center and City departments and agencies. Implementation of the proposed project would not affect or change the ability of CCSF or region, State, and Federal entities to plan for emergencies or execute the ERP in the event of an emergency.¹⁰³ Therefore, impacts resulting from risks due to fire or interference with an emergency response plan would be less than significant.

Impact HZ-5: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would have a less-than-significant impact on hazards and hazardous materials. (Less than Significant)

For the reasons discussed above, the proposed project’s effects related to hazards and hazardous materials, both individually and cumulatively, are considered less than significant.

<u>Topics:</u>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
17. MINERAL AND ENERGY RESOURCES – Would the project:					
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Encourage activities which result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

¹⁰³ City and County of San Francisco, *Emergency Response Plan – An Element of the CCSF Emergency Management Program*, December 2009.

Impact ME-1: The proposed project would not result in the loss of availability of a known mineral resource or a locally-important mineral resource recovery site. (No Impact)

All land in San Francisco, including the project site, is designated Mineral Resource Zone 4 (MRZ-4) by the California Division of Mines and Geology (CDMG) under the Surface Mining and Reclamation Act of 1975.¹⁰⁴ This designation indicates that there is inadequate information available for assignment to any other MRZ and thus the site is not a designated area of significant mineral deposits. Since the project site is currently developed and is surrounded by residential development, future evaluation or designation of the site would not affect or be affected by the proposed project. There are no operational mineral resource recovery sites in the project area whose operations or accessibility would be affected by the construction or operation of the proposed project. Thus, the project would not result in the loss of availability of a locally- or regionally-important mineral resource. The project would have no impacts on mineral resources.

Impact ME-2: Implementation of the proposed project would not encourage activities which would result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner. (Less than Significant)

The proposed project would not have a substantial effect on the use, extraction, or depletion of natural resources. In addition, the project would not, in and of itself, generate a significant demand for energy or an expansion of power facilities. The renovation of the athletic fields with synthetic turf would reduce field maintenance and water use. For this reason, the project would not cause a wasteful use of energy and would not have a significant effect on a natural resource.

Impact ME-3: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would have a less-than-significant impact on mineral and energy resources. (Less than Significant)

For the reasons discussed above, the proposed project's effects related to mineral and energy resources, both individually and cumulatively, are considered less than significant.

¹⁰⁴ California Geological Survey (formerly Division of Mines and Geology). *Open File Report 96-03*, 1996, and *Special Report 146 Parts I and II*, 1986 and 1987.

<u>Topics:</u>	<u>Potentially Significant Impact</u>	<u>Less Than Significant with Mitigation Incorporated</u>	<u>Less Than Significant Impact</u>	<u>No Impact</u>	<u>Not Applicable</u>
18. AGRICULTURE AND FOREST RESOURCES— Would the project					
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)) or timberland (as defined by Public Resources Code Section 4526)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Impact AF-1: The proposed project would not result in the conversion of farmland or forest land to non-farm or non-forest use, nor would it conflict with existing agricultural or forest use or zoning. (No Impact)

The project site is located within an urban area in the City and County of San Francisco. The California Department of Conservation’s Farmland Mapping and Monitoring Program identifies the site as *Urban and Built-Up Land*, which is defined as “... land [that] is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.” Because the project site does not contain agricultural uses and is not zoned for such uses, the proposed project would not convert any prime farmland, unique farmland or Farmland of Statewide Importance to non-agricultural use, and it would not conflict with existing zoning for agricultural land use or a Williamson contract, nor would it involve any changes to the environment that could result in the conversion of farmland. Therefore, the proposed project would have no impacts to agricultural resources.

Impact AF-2: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would have a less-than-significant impact on agriculture and forest resources. (Less than Significant)

For the reasons discussed above, the proposed project’s effects related to agriculture and forest resources, both individually and cumulatively, are considered less than significant.

<i>Topics:</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Not Applicable</i>
19. MANDATORY FINDINGS OF SIGNIFICANCE— Would the project:					
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have impacts that would be individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The foregoing analysis identifies potentially significant impacts to biological resources, which would all be mitigated through implementation of mitigation measures discussed above and included in Section F., below.

- a. As discussed in Topic E.13 (Biological Resources), it is possible that the proposed project may have adverse effects on special-status bats. Any potential adverse effects resulting from the proposed project would be reduced to a less-than-significant level by implementation of **Mitigation Measure BI-1**, described below in Section F. Accordingly, the proposed project would not result in a significant impact to biological resources through the reduction of the number of a rare animal.
- b. The proposed project in combination with projects at 259 Broad Street, 42 Miramar Avenue, and 33 Lee Avenue would not result in cumulative impacts to land use, aesthetics, population and

housing, cultural resources, transportation, noise, air quality, greenhouse gas emissions, wind and shadow, recreation, utilities, public services, biological resources, geology, hydrology, hazardous materials, mineral resources, and agricultural resources.

The proposed project's contributions to cumulative traffic at intersections in the vicinity would not be substantial. The proposed project would not be considered to contribute incrementally to cumulative regional air quality conditions, or to contribute to significant cumulative noise impacts. The proposed project would be consistent with the land use and height controls for the site and would not contribute to a cumulatively considerable land use or visual impact. No other significant cumulative impacts are anticipated. In summary, the proposed project would not have unavoidable environmental effects that are cumulatively considerable.

- c. The proposed project, as discussed in Section C (Compatibility with Existing Zoning and Plans) and Topic E.1 (Land Use and Land Use Planning), would be generally consistent with local land use and zoning requirements.

F. MITIGATION MEASURES AND IMPROVEMENT MEASURES

Mitigation Measures

The project sponsor has agreed to implement the following mitigation measures to reduce project impacts to a less-than-significant level.

Mitigation Measure BI-1: Pre-Construction Bat Surveys.

Conditions of approval for building and grading permits issued for demolition and construction within the project site shall include a requirement for pre-construction special-status bat surveys when large trees are to be removed. If active day or night roosts are found, the bat biologist shall take actions to make such roosts unsuitable habitat prior to tree removal or building demolition. A no-disturbance buffer of 100 feet shall be created around active bat roosts being used for maternity or hibernation purposes. Bat roosts initiated during construction are presumed to be unaffected, and no buffer would necessary.

Improvement Measures

Improvement Measure IM-TR-1: Traffic-related Measure

The following measure would reduce vehicle trips and to increase the use of rideshare, transit, bicycle, and walking modes for visitors and users:

- San Francisco Recreation and Park Department should formalize a Transportation Demand Management Plan that addresses travel to and from recreational fields, including posting of transit and rideshare information on related permits or websites, fostering the ongoing collection of travel mode data of its users, and developing other methods to encourage carshare, transit, pedestrian and bicycle travel, particularly as related to athletic field activities.

Improvement Measure IM-TR-2: Construction Traffic Measures

The following measures would further minimize disruption of the general traffic flow on adjacent streets:

- To the extent possible, truck movements should be limited to the hours between 9:00 a.m. and 3:30 p.m. (or other times, if approved by SFMTA). Additionally, the project should consider limiting truck movements along Capitola Avenue near the Sheridan Elementary School during their peak-period drop-off or pick-up time periods (7:30 to 7:50 a.m. and 1:45 to 2:15 p.m.).
- The Project Sponsor and construction contractor(s) could meet with the Sustainable Streets Division of the SFMTA, the Fire Department, Muni, and the Planning Department to determine feasible measures to reduce traffic congestion, including potential transit disruption, school pickup time conflicts, and pedestrian circulation impacts during construction of the project.
- As an improvement measure to minimize parking demand and vehicle trips associated with construction workers, the construction contractor could include methods to encourage carpooling and transit use to the project site by construction workers in the Construction Management Plan.
- As an improvement measure to minimize construction impacts on users, nearby residences and businesses, the project sponsor could provide regularly-updated information (typically in the form of website, news articles, on-site posting, etc.) regarding project construction and schedule, as well as contact information for specific construction inquiries or concerns.

Improvement Measure IM-BI-3: Nighttime Lighting Minimization

In compliance with the voluntary San Francisco Lights Out Program and the Standards for Bird-Safe Buildings, the following bird-safe facility construction and operations measures could be implemented to prevent and minimize the impacts of nighttime lighting on birds, bats, and other wildlife:

- Actively manage field lights so that they are on only when needed and are otherwise turned off, or utilize automatic controls (motion sensors, photo-sensors, etc.) to shut off lights in the evening when no one is present.

- Fully shield all lights to prevent upward and outward radiation.
- Focus lights specifically on areas needing illumination.
- Use lights of an intensity no higher than necessary.
- Use flat glass and ultra-low profile light fittings.
- Tightly seal lamp housings and locate them away from structures that may trap insects.

G. NEIGHBORHOOD NOTIFICATION

A "Notification of Project Receiving Environmental Review" was sent out on June 8, 2011, to the owners of properties within 300 feet of the project site and to occupants of properties adjacent to the project site, as well as to other interested parties. The Planning Department received several emails, letters, and telephone calls in response to the notice. Respondents requested to receive further environmental review documents and/or expressed concerns regarding the proposed project. Concerns regarding the proposed project included: (1) transportation effects; (2) effects on parking supply; and (3) effects associated with the use of synthetic turf. These issues are addressed in the discussion in Section E, Evaluation of Environmental Effects.

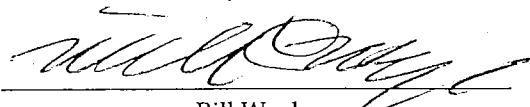
H. DETERMINATION

On the basis of this initial study:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, no further environmental documentation is required.

DATE

February 6, 2012



Bill Wycko

Environmental Review Officer

for

John Rahaim

Director of Planning

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