BEACH CHALET ATHLETIC FIELDS RENOVATION

Avian Monitoring Plan

Prepared for
San Francisco Recreation and
Parks Department

July 2014

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550 Kearny Street
Suite 800
San Francisco, CA 94108
415.896.5900
www.esassoc.com

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CHAPTER 1.0
Introduction

This Avian Monitoring Plan (AMP or Plan) details the survey and reporting requirements for the avian monitoring activities to be conducted for the Beach Chalet Athletic Fields Renovation (project) that is being executed by the San Francisco Recreation and Parks Department (SFRPD). This plan identifies the responsible parties and describes procedures for carrying out avian monitoring activities at the project site in an effort to determine potential impacts on resident and migratory bird species resulting from renovation of the athletic fields and specifically the addition of ten 60-foot-tall athletic field light standards.

1.1 Purpose and Need

This Avian Monitoring Plan has been prepared as a guidance document by Environmental Science Associates (ESA) for conducting monitoring activities at the project site. The monitoring activities will attempt to determine potential impacts on resident and migratory birds during fall and spring migration periods resulting from operation of the renovated Beach Chalet athletic fields and specifically the addition of ten 60-foot tall light standards. The plan is prepared at the request of SFPRD in cooperation with City Fields Foundation[1], the California Coastal Commission, and the City of San Francisco Planning Commission.

Beach Chalet Athletic Fields Renovation

The Beach Chalet Athletic Fields facility is an approximately 9.4-acre public sports field facility located at 1500 John F. Kennedy Drive, along the western edge of Golden Gate Park in the City and County of San Francisco (**Figure 1**). The Athletic Fields currently include four grass turf fields surrounded by an 8-foot-tall metal chain link fence, an approximately 25,320-square-foot, 50-space asphalt parking lot (including one disabled-accessible space), a restroom building, and a cargo container that is used as a maintenance shed (**Figure 2**). The project will replace the existing grass turf fields with synthetic turf, install field lighting, renovate the existing restroom building, install player benches and seating, and improve the overall conditions of the facility through various other modifications intended to increase the amount of play time[2] available on the athletic fields (**Figure 3**).

[1] The City Fields Foundation is a non-profit organization established in 2006 to address the chronic shortage of playfields in San Francisco and to help the City of San Francisco equitably provide sports facilities for youth and adult athletic leagues, school teams and physical education classes, and informal neighborhood play.

[2] Calculated as play hours per year.

SOURCE: Google; ESA

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Figure 1
Project Location

SOURCE: Google; ESA

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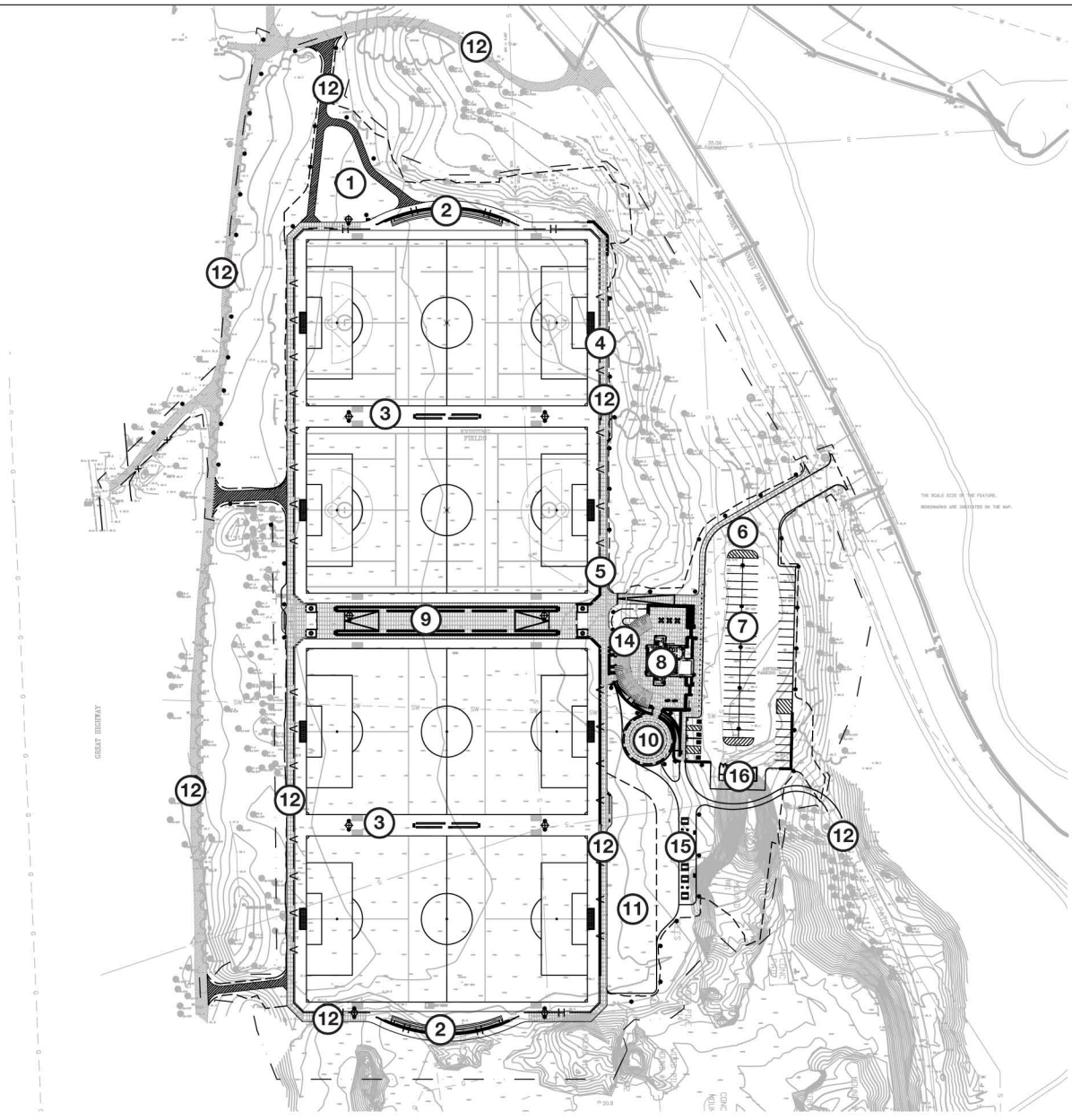
Figure 2
Aerial View of the Project Site



Legend

1. WARM UP AREA (NORTH OF FIELDS, 4000 SF)
2. SPECTATOR SEATING (250 SEATS)
3. SYNTHETIC TURF (4 FIELDS; 314,000 SF)
4. 16' BLACK VINYL FENCE (BEHIND GOALS)
5. 42" BLACK VINYL FENCE (ALL OTHER AREAS)
6. PARKING LOT (21,610 SF)
7. PARKING STALLS (12,450 SF PERMEABLE PAVEMENT WITH LIGHTING, 18' HEIGHT)
8. RESTROOM BUILDING
9. SPECTATOR SEATING (606 SEATS, 8 ACCESSIBLE)
10. PLAY STRUCTURES
11. WARM UP AREA (EAST OF FIELDS; 13,850 SF)
12. PEDESTRIAN PATHWAYS
13. LANDSCAPE AREAS
14. SEATING PLAZA
15. PICNIC TABLES/BBQ
16. MAINTENANCE SHED WITH GARBAGE AREA
17. PEDESTRIAN PATHWAY LIGHTING (15' HEIGHT)

0' 60' 120' 240' 360'

NORTH

SOURCE: Verde Design

Case No. 2010.0016E: Beach Chalet Soccer Fields

Figure 3
Proposed Site Plan

Installation of synthetic turf will allow for use in wet weather conditions and eliminate the need for the grass turf fields to rest and re-grow. The installation of lighting will allow for longer evening use of the fields and improved public safety. With implementation of the project, it is anticipated that approximately 9,582 additional hours of play per year of play time could be accommodated, for a total of 14,320 hours of annual play (an increase of more than 200 percent over existing conditions[3]).

The Beach Chalet athletic fields have no existing nighttime lighting and are generally closed to the public at sundown. Following the renovation, field lighting will consist of ten 60-foot-tall light standards made of galvanized steel. There will be two light standards each at the north and south ends of the facility oriented toward the two end fields. The other six light standards will be located between the centermost fields and have back-to-back light fixtures oriented to illuminate the interior fields (with each back-to-back fixture directed at two adjacent fields). Each light fixture, or assembly, will consist of seven 1,500-watt metal halide lamps. The assemblies will contain metal shields and will be directed downward to minimize spillover lighting beyond the project's boundaries (**Figure 4**). All lighting will be controlled by an online automated control system that will turn lights on at sunset and turn all the lights off upon field closure at 10:00 p.m. daily.

In addition to the field light standards, the project includes 47 approximately 15-foot-tall pedestrian pathway light standards and 13 approximately 18-foot-tall parking lot light standards. These will also be controlled by an online automated control system.

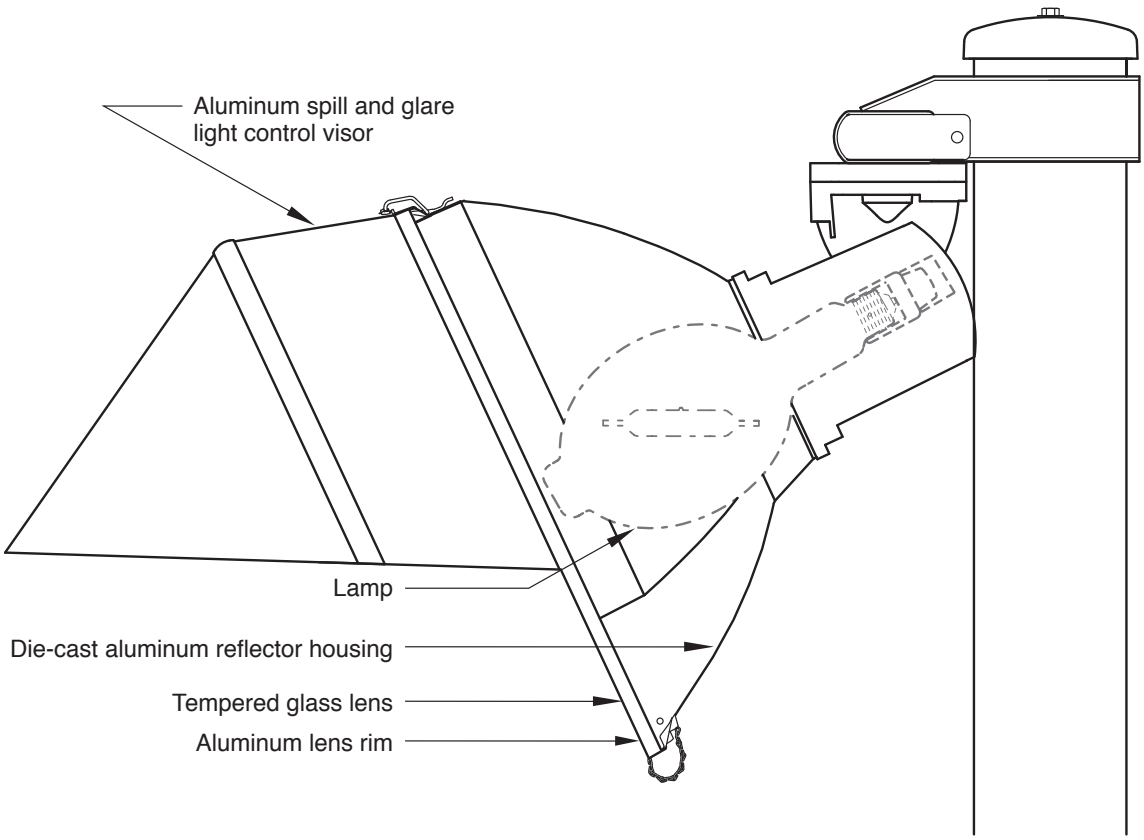
Project construction is anticipated to last approximately 10 months, beginning in summer/fall 2014. Construction activities will include use of standard earth-moving equipment for grading, large trucks for hauling, and a small crane to lift the light standards. The project will require excavation to a depth of approximately 1 foot below ground surface (bgs) for most project elements and approximately 10 feet bgs for the installation of seven 60-foot-tall light standards. Construction material staging and storage are anticipated to occur within the boundaries of the existing facility.

1.2 Plan Implementation

Plan Approach

Methodology described in this Avian Monitoring Plan evolved from discussions between ESA biologists and San Francisco Recreation and Parks Department, with input from members of the California Coastal Commission (CCC). A similar project and associated avian monitoring plan, *Malibu Middle and High School Athletic Field Lighting Project Avian Monitoring Plan* was also reviewed.

[3] The additional hours consist of: approximately 1,855 additional hours due to avoidance of field closure for rest and regrowth of grass turf, approximately 578 hours due to avoidance of closure during wet weather conditions, approximately 3,570 additional hours due to evening play, and approximately 3,580 additional hours due to use of the fourth field.



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SOURCE: Musco Lighting

Figure 4

Field Light with Shielding

When developing the current Plan, ESA's Technical Lead, Brian Pittman, *Certified Wildlife Biologist*, discussed the Malibu plan's strategy and survey efficiency with members of the Atkins consulting team who prepared and implemented the Malibu plan. Specifically, discussions focused on how to improve upon the Malibu survey protocol and optimize survey efficiency. The Beach Chalet Athletic Fields Renovation Avian Monitoring Plan reflects these communications.

Responsible Parties

The parties responsible for implementing this Avian Monitoring Plan are listed below along with a general description of responsibilities.

California Coastal Commission

The California Coastal Commission (CCC) has authority to regulate development within the California Coastal Zone according to the provisions of the California Coastal Act. The coastal zone generally extends three miles seaward and about 1,000 yards inland from the mean high tide line of the sea. The Western Shoreline Area Plan of the San Francisco General Plan is the City and County of San Francisco's certified LCP that and sets forth policies and objectives governing development in the coastal zone. The City maintains authority under the LCP to issue coastal development permits (CDPs) for development activities within its coastal zone boundary. Most CDPs are issued by the San Francisco Planning Commission (SFPC) pursuant to San Francisco Planning Code Section 330 et seq which is the case for the Beach Chalet Athletic Fields Renovation project.

The CCC requested the preparation of an Avian Monitoring Plan as a component of the athletic fields' renovation to identify potential adverse impacts to birds resulting from light standards. SFRPD will copy CCC with the final report outlining findings.

San Francisco Planning Commission

The San Francisco Planning Commission issued the CDP for the Beach Chalet Athletic Fields Renovation. The SFPC will review the Avian Monitoring Plan reports throughout implementation of the plan.

San Francisco Recreation and Parks Department

The San Francisco Recreation and Parks Department (SFRPD) is the project sponsor and will be implementing the renovation. SFRPD will review the Avian Monitoring Plan reports throughout implementation of the plan.

Monitoring Biologist and Technical Lead

ESA's qualified biologist with expertise in ornithology and knowledge of local avifauna will assess potential adverse impacts to migratory and resident bird species resulting from the field lights. ESA's qualified biologist hereinafter referred to as the Monitoring Biologist, will be responsible for implementing the avian monitoring survey and reporting requirements outlined in this Avian Monitoring Plan.

ESA's Technical Lead will provide oversight during implementation of the plan, interpretation of the study results, review plan reports, and communicate with project partners.

1.3 Thresholds of Significance for Determining Impacts during Avian Monitoring

The plan identifies the following thresholds for determining significant adverse impacts to migratory and resident bird species from the field lights. The criteria listed below will be used by the Monitoring Biologist during avian monitoring activities in determining potential adverse effects. Any of the following should be considered by the Monitoring Biologist when making a determination of a potential adverse affect on migratory and resident bird species.

1. **A bird strike with a light structure is observed.** This event will be interpreted as a blind collision with the light structure or a collision caused by being blinded, disoriented, or confused from the artificial lighting. The collision may or may not result in injury or mortality.

2. **A bird carcass is observed on or beneath a lighting structure,** providing evidence of a bird strike with the light structure that resulted in mortality. Bird carcasses will be inspected by the Monitoring Biologist for evidence that the cause of death was potentially directly related to the field lights and not an unrelated cause.

3. **Light swarming and entrapment behavior by a bird or group of birds is observed within the lighting sphere** during nights when the field lights are on, whereby birds are observed circling within the light sphere for a minimum total duration of two minutes during a monitoring effort. This behavior will be interpreted as a disruption of steller or other visual cues used during nocturnal migration as a result of positive phototaxis.

4. **Any other behavior observed and interpreted by the Monitoring Biologist as uncharacteristic and demonstrated to be correlated with the athletic field lights.**

CHAPTER 2.0
Monitoring Surveys

2.1 Survey Area

The monitoring survey area will include all areas of suitable avian habitat that fall within an approximately 300-foot sphere of the six monitoring stations positioned around the perimeter of the athletic fields. The survey area for the monitoring effort encompasses approximately 21 acres. Locations of the six monitoring stations and the seven 60-foot-tall light standards are depicted on **Figure 5**.

2.2 Methodology

General Survey Provisions

Surveys will be conducted by a qualified biologist with expertise in ornithology and knowledge of the local avifauna. Time of the survey, moon phase, atmospheric conditions including temperature, cloud cover, and wind velocity, avian behavior, and changes in avian behavior will be documented throughout the surveys. The Monitoring Biologist will produce a tally of species and abundance observed within the survey area during each monitoring event.

The only aural stimuli that will be used during the monitoring surveys will be "spishing" sounds produced by the Monitoring Biologist to instigate approach or vocalization by birds. Tapped vocalizations of bird calls or songs will not be used. Visual stimuli will not be used, except for very short duration spot lighting for safety and visual confirmation of a species. Spot lights should be limited to wheat lamps, nite lights, or seal-beam lights that produce less than 100,000 candle watt.

The Monitoring Biologist will immediately notify SFPRD should an adverse bird event related to the approved field lights occur at any time during the course of monitoring.

Monitoring Design and Schedule

Preconstruction Baseline Surveys

In order to establish a baseline avian presence at the Beach Chalet athletic fields, four point count surveys will be conducted during the 2014 spring migration period between April and May. The monitoring survey frequency will be approximately once per week. Preconstruction surveys will be conducted over a three hour period between 7:00 am and 11:00 am depending on weather conditions on the day of the survey.

SOURCE:ESRI, 2014; ESA, 2014

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Figure 5

Survey Area

Nighttime Surveys

Ten nighttime point count surveys will be conducted following the athletic fields' renovation and during a night when the light standards are illuminating the athletic fields. The monitoring survey frequency will be once a week, during weeks that the field lights are in operation in the fall and spring migration periods. Five surveys will be conducted during the fall migration period and five surveys will be conducted during the spring migration period. The fall migration period has been defined as a ten week period from September through the first week in November. The spring migration period has been defined as a ten week period from the last week in March through May. Each nighttime survey effort will start no earlier than one hour after sunset.

Morning Sweeps

Mornings following the nighttime surveys conducted during fall and spring migration the Monitoring Biologist will perform a sweep of the athletic fields to identify any evidence of adverse impacts to birds resulting from illumination of the athletic fields the night prior. Sweeps of the athletic fields will follow the transect survey method, described in detail below, and ensure 100 percent visual coverage of the fields and surrounding habitat included in the study survey area.

Preconstruction surveys reveal a strong presence of common ravens (*Corvus corax*) within the survey area. These birds are likely attracted to the fields and surrounding vegetation by the close proximity of the Beach Chalet restaurant dumpsters, which were often observed open during preconstruction surveys. Coyote have also been observed in Golden Gate Park. These species are both known scavengers and could disturb or remove bird strike evidence (i.e., carcasses) from the athletic fields. In order to ensure the most accurate assessment and inventory of the survey area is accomplished, morning sweeps shall be conducted by the Monitoring Biologist at first light to limit potential disturbance by such scavengers.

Point Count Surveys

Point count methods will be employed by the Monitoring Biologist during monitoring surveys to record bird species and numbers observed or detected by call within specific locations of the survey area. Six point count stations will be established around the athletic fields, one located at each of the four corners of the field and two at either side of the fields' centerline. The survey area will include a 250-foot visual radius around these six monitoring stations (see Figure 5). The six station survey areas will encompass the 60-foot tall light standards installed at the athletic fields as well as the surrounding habitat.

The point count duration at each station will be twenty minutes. At each station the Monitoring Biologist will perform visual scans of the 250-foot survey area radius and listen for avian vocalizations. Birds observed or heard during each station monitoring period will be recorded. As station survey areas overlap, birds heard or observed after the end of one monitoring station period will be included in the subsequent monitoring station tally. Birds observed outside of the survey area will not be counted. Counts will be tallied for birds suspected of occupying the

habitat within a point count station and birds flying over the point count station from adjacent areas.

Athletic Field Transect Surveys

A transect survey will be conducted by the Monitoring Biologist of the athletic fields following the point count surveys. These transect surveys of the athletic fields will occur immediately following the preconstruction surveys and the morning after nighttime surveys conducted while the lights are in use. Transect surveys following the preconstruction surveys will be conducted to characterize existing conditions of the athletic fields prior to the renovation and installation of the light standards. Transect surveys conducted after renovation of the athletic fields will be to identify any evidence of bird strikes or signs of stress resulting from the light standards illuminating the athletic fields the nigh prior. Such evidence of avian injury or mortality might include feathers, feather fragments, blood, tissue, and avian carcasses on the athletic fields and in surrounding habitat.

The Monitoring Biologist will walk meandering transects of the athletic fields and surrounding habitat while performing visual scans of the ground looking for bird carcasses and fallen sign evident of a potential bird strike. These transect surveys of will result in 100 percent visual coverage of the fields and surrounding habitat within the survey area. Any avian carcasses or sign will be photographed in-place by the Monitoring Biologist and its location will be documented on a map of the survey area. Avian carcasses encountered during transect surveys will be inspected by the Monitoring Biologist for evidence that the cause of death was potentially directly related to the field lights and not an unrelated cause. Carcasses will be collected and taken to the California Academy of Sciences (CAS) in Golden Gate Park for use in their collection or disposal as determined appropriate by CAS staff biologists. Any information regarding cause of death determined by the CAS biologists will be incorporated into the Final Monitoring Report.

CHAPTER 3.0
Reporting

3.1 Fall and Spring Monitoring Reports

Fall and spring seasonal migration reports of monitoring results will be prepared by the Monitoring Biologist after the completion of each seasonal monitoring effort. The seasonal reports will generally describe the monitoring survey methods and results and whether or not the survey data indicates a substantial adverse affect by the field lights on resident and migratory birds. The seasonal reports will incorporate the following:

- Dates and methods of the monitoring surveys
- Brief description of the areas surveyed with a representative figure
- Summary of each survey's monitoring results including:
    - List of bird species observed or otherwise detected
    - Total count of individuals observed or otherwise detected
    - Atmospheric conditions and timing of the surveys
    - Notable observations of avian behavior
- Discussion of the monitoring results, including how the data was interpreted, a comparison with baseline survey observations, and determinations of significant adverse impacts on birds according to thresholds established in this plan.
- Photo documentation

Fall and spring monitoring reports will be reviewed by ESA's Technical Lead and submitted to SFPRD within 30 days of completing the seasonal monitoring surveys.

3.2 Final Monitoring Report

A final monitoring report will be completed by the Monitoring Biologist, reviewed by the Technical Lead, and submitted to SFPRD. The report will summarize the results of both the fall and spring migration monitoring efforts, expand on information included in each of the seasonal migration reports, and evaluate the overall success or failure of the monitoring efforts implemented under this plan in identifying adverse impacts on avian species resulting from the renovation of the Beach Chalet Athletic fields and the installation of 60-foot tall light standards.. The final monitoring report will be submitted to SFPRD within 60 days of completing the final monitoring survey.

CHAPTER 4.0
References

Atkins. 2012. *Malibu Middle School and High School Athletic Field Lighting Project Avian Monitoring Plan.* Prepared for Santa Monica Schools, May 14, 2012.