

CITY OF RANCHO CORDOVA  
REVISED KILGORE ROAD SOCCER FIELD  
COMPLEX PROJECT  
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

---

*Prepared for:*

CITY OF RANCHO CORDOVA  
2729 PROSPECT PARK DRIVE, SUITE 220  
RANCHO CORDOVA, CA 95670

*Prepared by:*

**Michael Baker**

**INTERNATIONAL**

2729 PROSPECT PARK DRIVE, SUITE 220  
RANCHO CORDOVA, CA 95670

**APRIL 2017**



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MICHAEL BAKER INTERNATIONAL  
2729 PROSPECT PARK DRIVE, SUITE 220  
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**APRIL 2017**



**TABLE OF CONTENTS**

1.0 Environmental Checklist Form ..... 1

2.0 Environmental Factors Potentially Affected..... 17

3.0 Determination (to be completed by the lead agency)..... 18

4.0 Evaluation of Environmental Impacts ..... 19

    1. Aesthetics..... 21

    2. Agriculture and Forestry Resources..... 24

    3. Air Quality..... 25

    4. Biological Resources..... 33

    5. Cultural Resources ..... 46

    6. Geology and Soils..... 48

    7. Greenhouse Gas Emissions..... 51

    8. Hazards and Hazardous Materials ..... 54

    9. Hydrology and Water Quality..... 56

    10. Land Use and Planning ..... 61

    11. Mineral Resources..... 62

    12. Noise ..... 63

    13. Population and Housing ..... 66

    14. Public Services..... 67

    15. Recreation ..... 69

    16. Transportation/Traffic ..... 70

    17. Utilities and Service Systems ..... 74

    18. Mandatory Findings of Significance ..... 77

5.0 References ..... 79

**APPENDICES**

- Appendix A – Land Use Covenant
- Appendix B – Lighting Study
- Appendix C – Air Quality
- Appendix D – Biological Resources
- Appendix E – Tribal Consultation
- Appendix F – Soil Management Plan and DTSC Approval Letter
- Appendix G – Greenhouse Gas Emissions
- Appendix H – Noise Study
- Appendix I – Trip Generation Assessment

## TABLE OF CONTENTS

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### Figures

Figure 1 Regional Vicinity .....	7
Figure 2 Project Location.....	9
Figure 3 Conceptual Plan .....	11
Figure 4 Proposed Restroom/Concessions Building Elevations .....	13
Figure 5 Proposed Lighting Plan .....	15
Figure 6 CNDDDB Occurrences of Special-Status Species within 1 Mile of Project Site.....	37

### Tables

Table 1 Proposed Parking Summary .....	3
Table 2 Construction Equipment Summary .....	4
Table 3 Construction-Related Criteria Pollutant and Precursor Emissions (Pounds per Day) .....	27
Table 4 Long-Term Unmitigated Operational Emissions (Pounds per Day) .....	28
Table 5 Construction-Related Greenhouse Gas Emissions (Metric Tons per Year) .....	52
Table 6 Operational-Related Greenhouse Gas Emissions (Metric Tons per Year) .....	53
Table 7 Existing and Existing Plus Project Intersection Levels of Services .....	72

**1.0 ENVIRONMENTAL CHECKLIST FORM**

- 1. **Project title:** Kilgore Road Soccer Field Complex
- 2. **Lead agency name and address:** City of Rancho Cordova  
2729 Prospect Park Drive  
Rancho Cordova, California 95670
- 3. **Contact person and phone number:** June Cowles, Senior Planner, (916) 851-8756
- 4. **Project location:** The project site is located at 3151 and 3181 Kilgore Road at the corner of White Rock Road and Kilgore Road in the City of Rancho Cordova, Sacramento County, California. The project site consists of two complete parcels and one partial parcel identified as Assessor's Parcel Numbers (APNs) 072-0260-031, 072-0260-032 (partial), and 072-0680-070. The project site encompasses approximately 10.76 acres. The project location is shown on **Figure 1** and **Figure 2**.
- 5. **Project sponsor's name and address:** San Juan Soccer Club  
11151 Trade Center Drive, Suite 203  
Rancho Cordova, CA 95670
- 6. **General Plan designation:** Office Mixed Use (OMU)
- 7. **Zoning:** OPMU (Office Professional Mixed Use)
- 8. **Project background:**

A portion of the project site (APN 072-0260-031; referred to as "Parcel A" by the California Department of Toxic Substances Control [DTSC]) was formerly part of a larger site used to operate an oil reprocessing facility between the mid-1950s and approximately 1968. These operations included use of two unlined holding ponds to store and treat wastewater and oils for resale. As a result of these operations, elevated concentrations of hazardous substances were detected in soil and groundwater and the property was added to the California State list of hazardous substance release sites selected for response action on January 1, 1985.

On January 4, 2002, the DTSC filed suit in the United States District Court, Eastern District of California, under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) seeking recovery of costs associated with the response to releases and threatened releases of hazardous substances at or from Parcel A, and for abatement of a public nuisance. Site investigations were conducted and a Remedial Action Plan (RAP) was prepared to address the contamination. In addition, Land Use Covenants (LUC) were recorded for Parcel A and an adjacent parcel (not part of the project site), limiting future site uses to commercial and industrial. The soil and groundwater at the property were remediated per the RAP and certified as completed on June 30, 2014, and the existing LUCs were terminated. Remediation included excavation and disposal of shallow soil in the area of the former ponds, installation of an asphalt cap to reduce rainwater infiltration and eliminate exposure, and monitored natural attenuation

of groundwater. However, soils were not remediated to levels protective for unrestricted land use, and so a new LUC was recorded for Parcel A on June 10, 2014 (see **Appendix A**) to provide requirements and restrictions to minimize inappropriate exposure and prevent inappropriate land use. Prohibited uses of the site include any type of residence, hospital, public or private school for children, or day care center for children. In a letter dated March 24, 2015 (see **Appendix A**), the DTSC stated that the proposed land use of a soccer field facility is not inconsistent with the LUC on the site.

The reader is referred to subsection 8, Hazards and Hazardous Materials, for further discussion of the site's contamination, remediation, and use restrictions.

A Mitigated Negative Declaration for the Kilgore Soccer Field Complex was prepared and circulated for public review between March 3, 2017 and April 3, 2017. The project has since been revised and this Mitigated Negative Declaration provides an analysis of the revised project. The revised project description is included below. One comment, from DTSC, was received on the previous MND and, based on that comment, mitigation measures MM 8.3 and 8.4 were incorporated into this document. A comment letter was also received from the Central Valley Regional Quality Control Board (CVRWQCB); however, the comments were general in nature, related to the responsibilities of the CVRWQCB and not specific to the project. No changes to the previous MND are required based on the CVRWQCB comments. Sacramento Municipal Utility District (SMUD) submitted a letter stating that SMUD had no comments to offer at the time of the letter. No further comments were received on the previous MND.

### 9. Description of project:

The project applicant is requesting a Major Design Review for a lighted soccer field complex consisting of four fields: two full-sized fields (225 feet by 360 feet), one junior field (141 feet by 225 feet), and one tot field (96 feet by 141 feet). The conceptual plan for the proposed project is shown on **Figure 3**. All four fields would be covered with artificial turf. The project would include one prefabricated single-story concession/restroom/storage building. Proposed elevations for the building are shown on **Figure 4**. In addition, the project would include a fabric-covered seating/picnic area, spectator areas covered with decomposed granite or pavers, player benches, and bleacher seating with a total capacity of 150 people. Retaining walls constructed of tan concrete block, ranging in height from 8 inches to 4.5 feet may be required along the south boundary and eastern edge of the soccer fields.

#### Parking and Vehicle Circulation

According to the Rancho Cordova Municipal Code (RCMC) Section 23.719.080 (Vehicle Parking Requirements), an Outdoor Commercial Recreation use, such as the proposed project, is required to provide two parking spaces per 1,000 square feet of active recreation area (e.g., soccer field). The project proposes to construct 202,902 square feet of soccer field, which would require the provision of approximately 406 parking spaces ( $195,615/1,000 = 195.6 \times 2 = 405.8$ ).

The project proposes to provide a total of 313 on-site parking spaces primarily located along Kilgore Road (see **Figure 3**). The following table summarizes the types of parking spaces proposed to serve the project.



TABLE 1  
PROPOSED PARKING SUMMARY

Type of Parking Space	Number Proposed
Standard	305
Standard ADA Compliant	6
Van ADA Compliant	2
	313

Thus, the project would be deficient by 93 parking spaces (406 – 313 = 93). However, the project includes a request to the City for a parking adjustment per RCMC Chapter 23.131 (Adjustment), which allows for a maximum parking requirement reduction of 30 percent. This would reduce the project’s parking requirement to 285 spaces (30% of 406 = 121; 406 – 121 = 285). If approved, the proposed project would meet the reduced requirement and would be considered to provide sufficient on-site parking.

Site Access and Circulation

The site would be accessed from Kilgore Road via two two-way driveways located at the north end and south end of the site. The driveways would provide two-way access to the parking lot, which would be configured in two loops.

Pedestrian and Bicycle Facilities

Sidewalks and on-street (Class II) bicycle lanes exist along Kilgore Road and White Rock Road in the vicinity of the project site. The project proposes to provide pedestrian walkways along the perimeter of the proposed parking areas and soccer fields. In addition, the project proposes to provide on-site bicycle parking near the proposed concession/restroom/storage building.

Lighting

The proposed lighting plan includes pole-mounted lighting fixtures around the soccer fields and in the parking lot. The proposed sports lighting system would consist of 11 poles 60 feet in height, with a total of 87 LED 5700K luminaires. The proposed layout of the sports lighting system is shown in **Figure 5**. The proposed parking lot lighting system would consist of 25 poles 24 feet in height, with a total of 51 luminaires. All proposed outdoor lighting fixtures would require City approval of a Minor Design Review, which would include review of the proposed fixture height and intensity as well as potential impacts to adjacent uses.

Landscaping

The proposed project would include landscaping throughout the proposed parking areas, including shade trees around the perimeter and within landscaping medians.

Capacity and Hours of Operation

According to the project applicant, field use would be limited on weekdays to evening practice by teams of various ages. The fields would likely see practice in two shifts, with younger teams practicing from approximately 5:30 p.m. to 7:00 p.m. and older teams practicing later in the evening (until 10:00 p.m.). Practices could typically involve up to 15 persons per team and the

## ENVIRONMENTAL CHECKLIST

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fields could accommodate three teams at a time, as the small fourth field (tot lot) would not be used. A field might occasionally be used for weekday matches, but this would be the exception.

The field would be used for Saturday matches during the competitive season. Teams would be scheduled beginning at 9:00 a.m. and would occupy the fields in 1.5-hour time blocks until about 5:00 p.m. Regular evening matches are not anticipated. At any time there could be six to eight teams on the fields and another six to eight teams traveling to or from the site, depending on use of the small field.

The site may occasionally be used for tournaments, and teams might expect to play more than one match per day during a tournament. However, a facility of this size would not host major tournaments with day-long attendance by teams and spectators, and the travel activity associated with tournaments would be similar to that accompanying regular San Juan Soccer Club weekend use.

### Employment

The proposed project would generate temporary construction jobs during the two-month construction phase. Once operational, the project is expected to generate approximately two jobs (concession stand and general maintenance).

### Construction

The construction phase of the proposed project is anticipated to last three months. The site is currently vacant; thus no major demolition would be required. The project would include removal of some existing areas of concrete, three segments of curb/gutter/sidewalk, a chain link fence, and a small group of trees. A total of approximately 10.76 acres would be graded and 3.4 acres of that total would be paved. No soil import or export is expected. All temporary construction equipment and vehicle parking would occur on the project site. Construction equipment anticipated to be required during project construction is summarized in **Table 2**.

**TABLE 2**  
**CONSTRUCTION EQUIPMENT SUMMARY**

Equipment Type	Construction Phase		
	Site Grading	Building Construction	Paving
Cranes	--	0-1	--
Excavator	--	1	--
Graders	1-2	--	--
Pavers	--	--	1
Rollers	0-1	--	1-2
Rough Terrain Forklifts	--	0-1	--
Rubber-Tired Dozers	1-2	1-2	--
Rubber-Tired Loader	0-1	0-1	--
Scraper	0-1	--	--
Skid Steer Loaders	--	1	1
Surfacing Equipment	--	--	1
Tractors/Loaders/Backhoes	1-2	1-2	1-2
Trencher	1	1	--

Due to the previous hazardous contamination on the site, certain restrictions would be in place during construction activities to protect workers, the public, and the environment from possible exposure. These restrictions are summarized in the LUC (Appendix A) and the Soil Management Plan (Appendix F). For example, the LUC requires that the asphalt cap on the site remain intact and that no buildings or utilities which carry liquids be constructed in the area of the cap. The Soil Management Plan contains numerous restrictions related to worker safety; storage, transport, and disposal of excavated soils; and use of clean fill for backfilling (Wallace-Kuhl & Associates 2015). The reader is referred to Appendices A and F for further details.

### Utilities

#### *Water*

Water service would be provided to the proposed project by Golden State Water Company. There are currently no water supply facilities on-site; the project would include extension of such facilities onto the site from a water main located in Kilgore Road. The project's water demand has been estimated by the project applicant at approximately 2 acre-feet per year (AFY). This includes water use at the proposed concession/restroom building as well as landscape irrigation. The proposed concession/restroom building would be equipped with low-flow water fixtures and the proposed irrigation system would utilize drip and micro spray systems. The two full-sized fields would be covered with artificial turf and would not require regular irrigation.

#### *Wastewater*

Wastewater conveyance and treatment services would be provided to the proposed project by the Sacramento Area Sewer District.

#### *Solid Waste*

Solid waste collection and disposal services would be provided to the proposed project by Republic Services/Atlas Disposal.

#### *Electricity*

Electricity service would be provided to the proposed project by the Sacramento Municipal Utility District.

#### *Telephone*

Telephone service would be provided to the proposed project by SureWest.

### **10. Surrounding land uses and setting (briefly describe the project's surroundings):**

The project site is vacant, undeveloped land covered with weedy, nonnative grasses that are periodically mowed. The site is generally flat, sloping gently from east to west. The previously described asphalt cap is located near the center of the site's northern boundary and extends onto the adjacent property. Remnants of building foundations associated with the former oil reprocessing facility are present in the northern portion of the site near the cap area. There is currently a small group of trees along the site's northern boundary. The trees will be removed as part of site demolition. There are no aquatic features on the site.

## ENVIRONMENTAL CHECKLIST

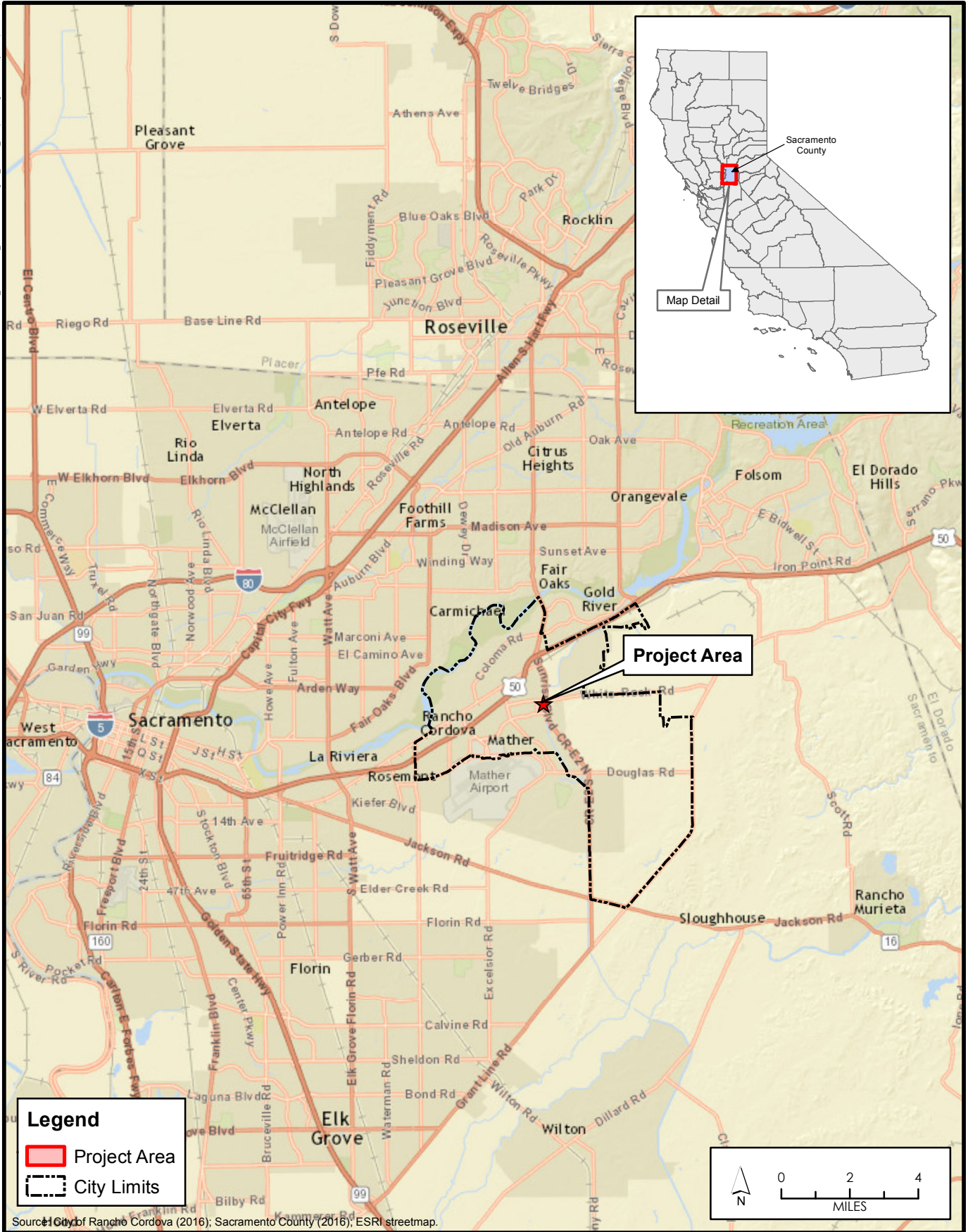
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North of the site is an undeveloped parcel with similar weedy nonnative grasses and the remaining portion of the asphalt cap. Beyond this parcel lies White Rock Road and professional office development. Kilgore Road is located immediately west of the site with professional office development and associated surface parking lots located farther west. Immediately south of the site is a vacant, undeveloped parcel. Beyond is Crawford Drive, a two-lane road which terminates just east of Kilgore Road. South of this is a single office building and associated surface parking area. East of the site is vacant, undeveloped land. Farther east is the Folsom South Canal, Sunrise Boulevard, and retail development.

The Sacramento Metropolitan Fire Department (Metro Fire) Station 66 is just southwest of the project site at 3180 Kilgore Road. There are three educational facilities located within one-quarter mile of the site: (1) Play-ology, a drop-in child care facility at 3084 Sunrise Boulevard, approximately 0.18 miles northeast of the site; (2) Children First Learning Center, a day care and after-school program at 3039 Kilgore Road, approximately 0.24 miles north of the site; and (3) National Career Education, a medical training program at 11080 White Rock Road, approximately 0.11 miles west of the site.

### **11. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement)**

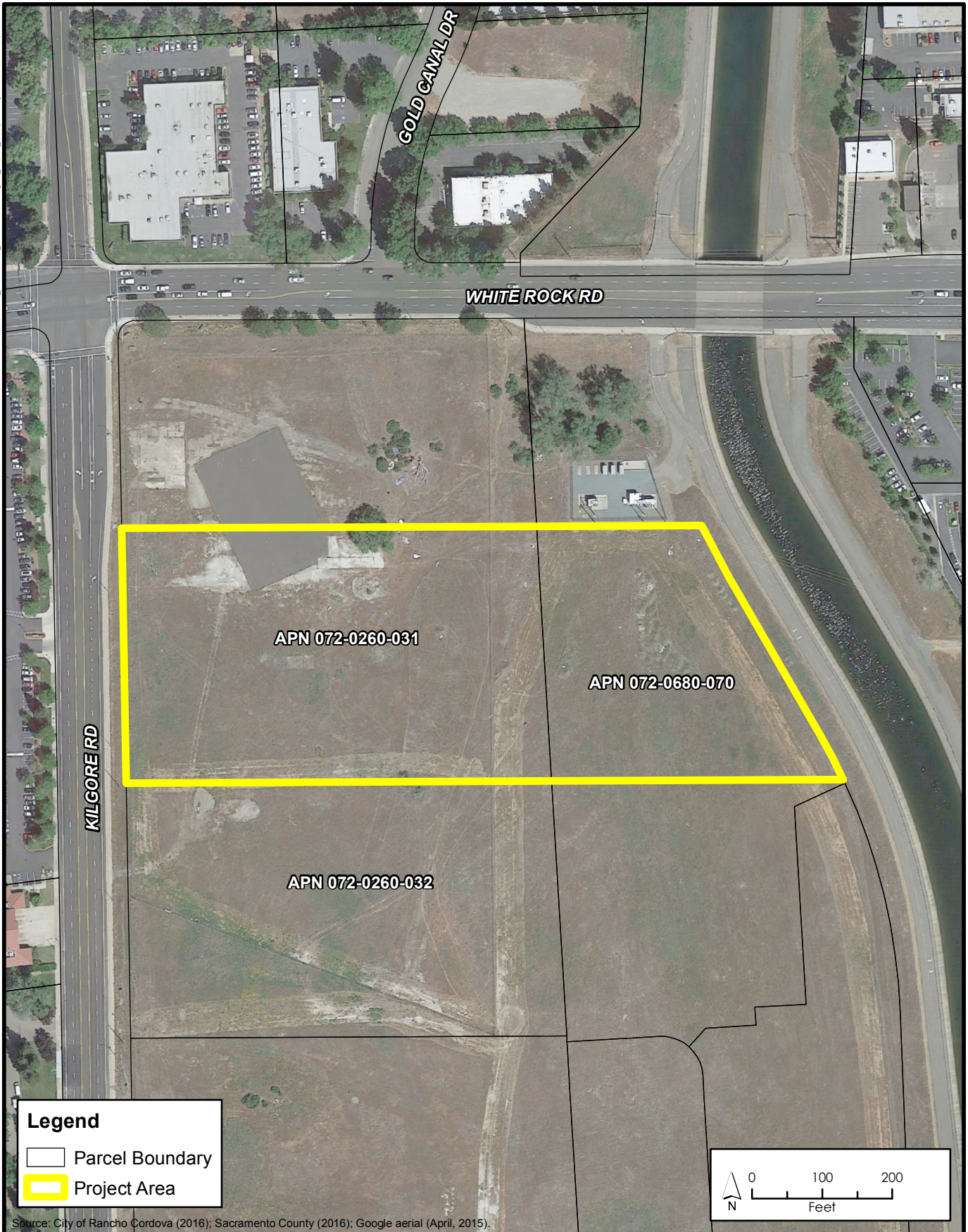
This initial study covers all approvals by government agencies that may be needed to construct, implement, or operate the proposed project. As noted previously, the proposed project would require approval of a Major Design Review, Improvement Plans, Building Plans, and a parking standard adjustment by the City of Rancho Cordova. At this time, no other discretionary public agency approvals are known to be required for the project.



City of Rancho Cordova  
Planning Department

**Figure 1**  
Regional Vicinity





Source: City of Rancho Cordova (2016); Sacramento County (2016); Google aerial (April, 2015).

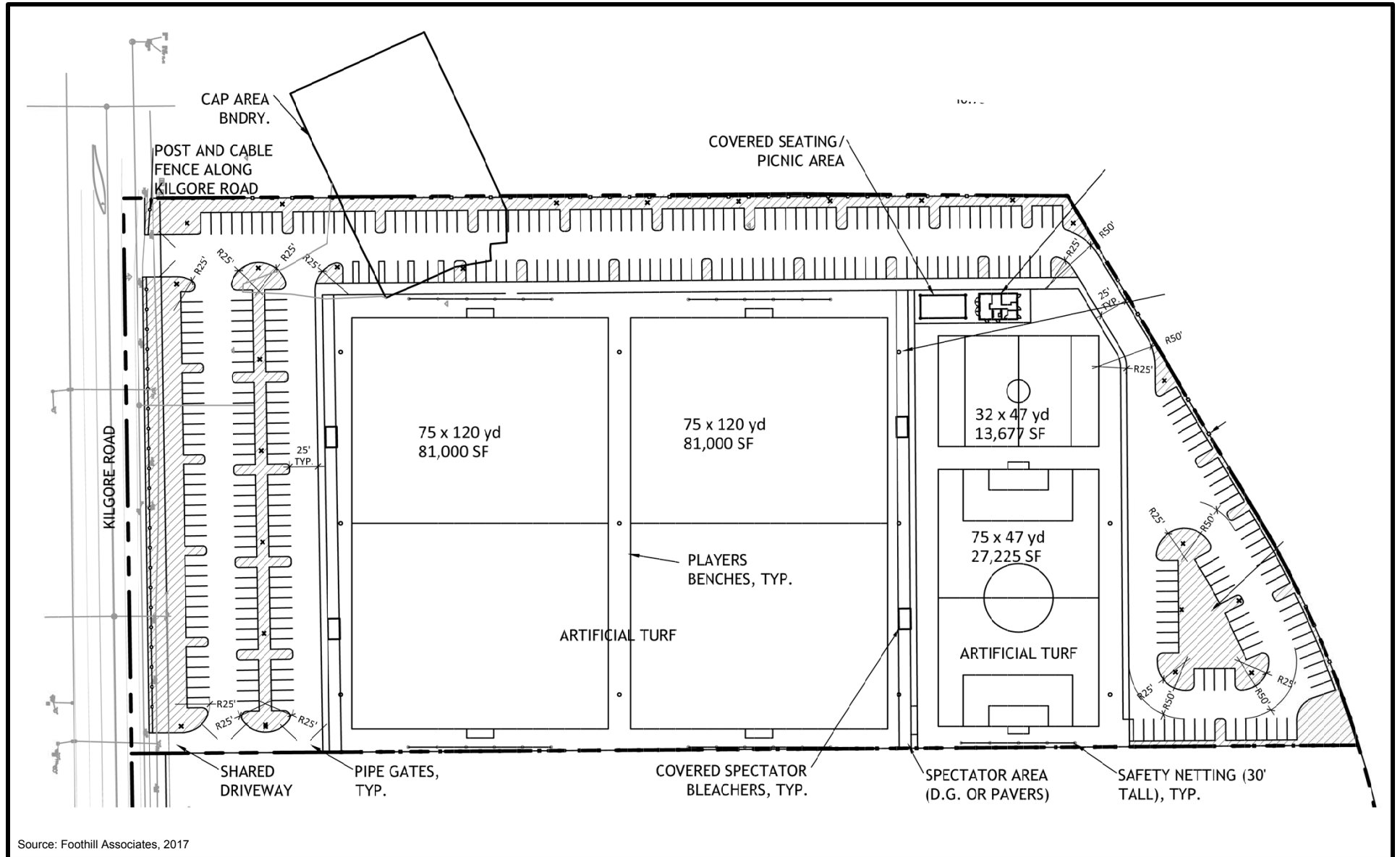


City of Rancho Cordova  
Planning Department

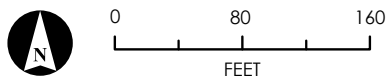
**Figure 2**  
Project Location





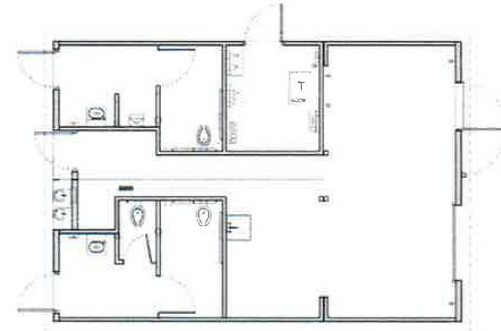


Source: Foothill Associates, 2017



**FIGURE 3**  
Conceptual Site Plan





**FLOOR PLAN**

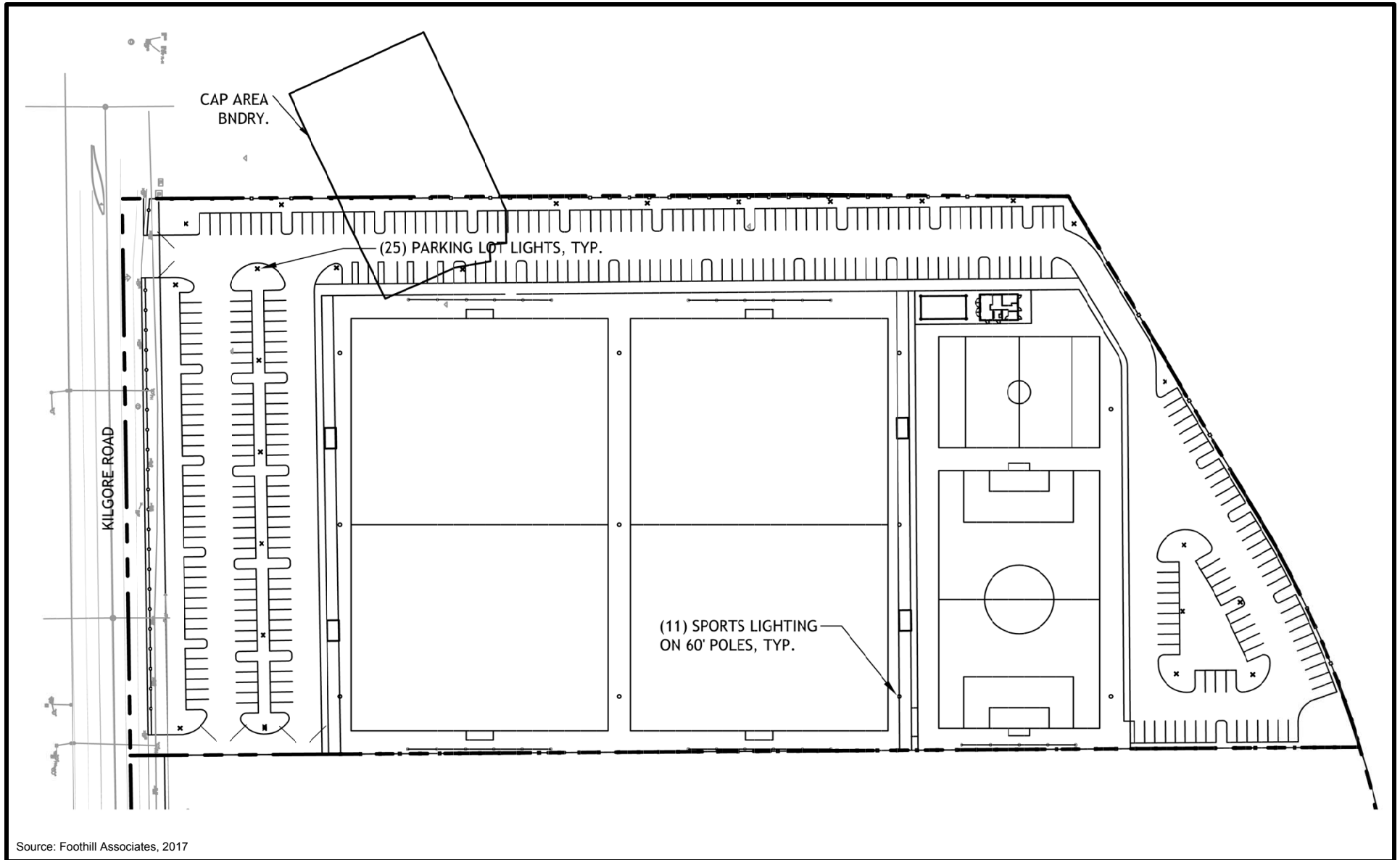
SCALE: NOT TO SCALE



Source: Public Restroom Company

**FIGURE 4**  
Restroom/Concession Building Elevations





Source: Foothill Associates, 2017

**FIGURE 5**  
Proposed Lighting Plan



**2.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED**

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is “Potentially Significant” or “Potentially Significant Unless Mitigation Incorporated” as indicated by the checklist on the following pages.

- |  |   |   |
|--|---|---|
| <input checked="" type="checkbox"/> Aesthetics           | <input type="checkbox"/> Agriculture and Forestry Resources       | <input checked="" type="checkbox"/> Air Quality             |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources            | <input checked="" type="checkbox"/> Geology/Soils           |
| <input type="checkbox"/> Greenhouse Gas Emissions        | <input checked="" type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality            |
| <input type="checkbox"/> Land Use/Planning               | <input type="checkbox"/> Mineral Resources                        | <input type="checkbox"/> Noise                              |
| <input type="checkbox"/> Population/Housing              | <input type="checkbox"/> Public Services                          | <input type="checkbox"/> Recreation                         |
| <input type="checkbox"/> Transportation/Traffic          | <input type="checkbox"/> Utilities/Service Systems                | <input type="checkbox"/> Mandatory Findings of Significance |

## ENVIRONMENTAL CHECKLIST

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### 3.0 DETERMINATION (to be completed by the lead agency)

On the basis of this initial evaluation:

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, nothing further is required.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
April 12, 2017

Date

Patrick Hindmarsh  
\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Environ. Coordinator  
Title



**4.0 EVALUATION OF ENVIRONMENTAL IMPACTS**

- 1) A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources cited following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
- 2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- 3) Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more “Potentially Significant Impact” entries when the determination is made and feasible mitigation is not identified, an EIR is required.
- 4) “Negative Declaration: Less Than Significant With Mitigation Incorporated” applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures “Earlier Analyses,” as described in (5) below, may be cross-referenced).
- 5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
  - a) Earlier Analysis Used. Identify and state where they are available for review. This analysis relies on the City of Rancho Cordova General Plan EIR (SCH# 2005022137) for certain impact analysis, as noted in the following discussion. The General Plan EIR is available for public review at the City offices at 2729 Prospect Park Drive, Rancho Cordova CA 95670, and online at <http://www.cityofranhocordova.org/i-want-to-/learn-about/general-plan>.
  - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
  - c) Mitigation Measures. For effects that are “Less Than Significant With Mitigation Measures Incorporated,” describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
- 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

## **ENVIRONMENTAL CHECKLIST**

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- 7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
- 8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
- 9) The explanation of each issue should identify:
  - a) The significance criteria or threshold, if any, used to evaluate each question; and
  - b) The mitigation measure identified, if any, to reduce the impact to less than significant.

## ENVIRONMENTAL CHECKLIST

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>1. AESTHETICS.</b> Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### DISCUSSION OF IMPACTS

- a) **No Impact.** Views from the project site include urban development, scattered trees, utility lines, and a water tower. The topography of the surrounding area is relatively flat and there are no unique or significant scenic vistas. Therefore, the proposed project would have no potential to adversely affect a scenic vista and there would be no impact.
- b) **No Impact.** The highways nearest the project site are US 50 and the Jackson Highway (State Route 16). Neither of these highways are designated as state scenic highways in the vicinity of the project site (Caltrans 2016). As such, implementation of the proposed project would have no potential to damage scenic resources or views within a state scenic highway. There would be no impact.
- c) **Less Than Significant Impact.** The project site is currently vacant, undeveloped land covered with weedy, nonnative grasses and a small groups of trees. The site also contains an area capped with asphalt and the remnants of some former building foundations. The project site does not contain any unique or outstanding visual resources and is not considered to be of high visual quality. Implementation of the proposed project would convert the site to a soccer field complex consisting of large areas of turf, surface parking areas, and one small building and covered picnic area. These uses would be consistent with the surrounding development, which includes office parks with multilevel buildings, large surface parking areas, and ornamental landscaping. Furthermore, the project site is planned for future development. Therefore, the proposed project would not substantially degrade the existing visual character or quality of the site or its surroundings. This impact would be less than significant.
- d) **Less Than Significant Impact With Mitigation Incorporated.** The proposed project would create a new source of substantial light and glare by installing a sports lighting system around the perimeters of the proposed soccer fields as well as parking lot lighting and security and interior lighting at the concession/bathroom/storage building. The proposed sports lighting system would consist of 11 poles 60 feet in height, with a total of 87 LED 5700K luminaires; the proposed parking lot lighting system would consist of 25 poles 24 feet in height with a total of 51 luminaires (see **Figure 5**).

A lighting study was prepared for the project as originally proposed by Benya Burnett Consultancy (2015; see **Appendix B**) to determine the extent to which the proposed lighting would cause environmental impacts. The findings of the lighting study are summarized below. The revised project proposes a lighting plan similar to the originally proposed project with light poles of the same heights located around the perimeter of the soccer fields and parking lots. The revised lighting plan would consist of a total of 138 luminaires which is 13 luminaires fewer than originally proposed. In addition, under the revised project the proposed facility would be located approximately 100 feet farther from the closest residences south of the site. Thus, the revised project would reduce lighting levels on the site compared to the originally proposed project and the lighting study provides a more conservative analysis of the project's potential lighting impacts.

In addition, the proposed lighting system would require approval of a Minor Design Review by the City and the proposed pole height and lighting levels would be reviewed as part of the overall Major Design Review process.

### **Sports Lighting System**

The lighting study assessed vertical illuminance in the plane of the property line projected upward to the heights of the lighting poles to determine the potential for the system to create an excessive off-site lighting impact. According to Burnett (2015), a well-shielded lighting system will exhibit maximum trespass levels not exceeding 0.8 foot-candles, consistent with Table 26.5 in the Illuminating Engineering Society's Lighting Handbook. The manufacturer's calculations show a worst case trespass level 5 feet above the ground of 0.7 foot-candles along Kilgore Road. Equally low levels would be maintained at all heights, up to 35 feet approximately 15 yards beyond the out-of-bounds line around all of the soccer fields. Thus, Burnett concluded, the proposed sports lighting system would produce little or no off-site glare or trespass.

In addition to off-site trespass, sports lighting systems have the potential to produce a light "dome" over the area it illuminates, resulting from atmospheric light scattering and reflecting off the ground and diminishing as distance from the field increases. However, according to Burnett (2015), due to the optical design of the proposed system, which limits off-site spill and trespass, the light dome associated with the proposed project would be significantly less than light domes associated with typical sports lighting systems. The light dome produced by the proposed system would also be reduced by the proposed use of modest (30 foot-candles) sports light levels on the fields, compared with a typical high school football field which produces over 70 foot-candles on the field. The light dome created by the proposed sports lighting system would be noticeable and disruptive to the night environment for a radius of roughly one-quarter mile (1,320 feet). Existing and planned development surrounding the project site includes almost entirely office uses and does not include any sensitive receptors for nighttime lighting. The nearest residence to the project site is located approximately 1,500 feet south of the site. Furthermore, as a condition of project approval, no outdoor activities would occur on the site before 7:00 a.m. or after 10:00 p.m. consistent with the City's noise ordinance (Chapter 6.68). This would further ensure that residential uses in the area are not disturbed during the more sensitive nighttime hours. Therefore, while the project would create a new source of light and glare, it would not be expected to adversely affect day or nighttime views in the area.

The proposed sports lighting system would meet applicable standards including Rancho Cordova Municipal Code Chapter 23.725 (Outdoor Lighting) and the California Energy Code (California Title 24, Part 6, Section 147), provided that it is equipped with lighting controls that ensure lights are turned off within one hour of the end of an evening sports event as required by Section 23.725.070 (General lighting standards) in the City Zoning Code. Thus, this impact would be potentially significant. However, implementation of mitigation measure **MM 1.1** requiring such lighting controls would reduce this impact to a **less than significant** level.

**Parking Lot Lighting**

The project proposes 5700K luminaires and would produce light levels that are generally consistent with commercial light levels in the area, with an average of about 1.5 foot-candles. The shielding and appropriate brightness of commercial parking lot luminaires can be ascertained by the "BUG" (backlight-uplight-glare) system. The proposed luminaire is rated BUG 3-0-3, which means it has no uplight. According to Burnett (2015), the proposed parking lot lighting would create a small fraction of the light of the proposed sports lighting system and would have a minimal effect. However, color contrast can exacerbate the impact. At 5700K, the proposed parking lot lighting would stand out relative to the street lighting and other parking lots in the area. Thus, this impact would be potentially significant. The proposed parking lot lighting would meet applicable standards provided that it is equipped with motion sensors. Implementation of mitigation measure **MM 1.1** requiring use of motion sensors in the parking lot lighting system would reduce this impact to a **less than significant** level.

Mitigation Measures

**MM 1.1** The proposed sports lighting system shall be equipped with automated controls that turn the system off within one hour of the end of an evening (after sunset) event. The proposed parking lot lighting system shall be equipped with motion sensors to ensure lighting is only in use when people are present.

*Timing/Implementation: Prior to approval of design review*

*Enforcement/Monitoring: City of Rancho Cordova Planning Department*

**ENVIRONMENTAL CHECKLIST**

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<p><b>2. AGRICULTURE RESOURCES.</b> In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forestland, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:</p>				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>
c) Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forestland or conversion of forestland to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use or conversion of forestland to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**DISCUSSION OF IMPACTS**

a-e) **No Impact.** The project site is located in an urbanized area of the city that does not contain or allow for any agriculture or forest uses. The project site and surrounding area is designated by the Farmland Mapping and Monitoring program (DOC 2015) as Urban and Built-Up Land. Therefore, project implementation would not convert any important farmland or forestland or conflict with zoning for such uses. There would be no impact.

## ENVIRONMENTAL CHECKLIST

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>3. AIR QUALITY.</b> Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<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 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 in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<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"/>

### DISCUSSION OF IMPACTS

**a,b) Less than Significant Impact with Mitigation Incorporated.** The Sacramento Metropolitan Air Quality Management District (SMAQMD) coordinates the work of government agencies, businesses, and private citizens to achieve and maintain healthy air quality for the Sacramento area. The SMAQMD develops market-based programs to reduce emissions associated with mobile sources, processes permits, ensures compliance with permit conditions and with SMAQMD rules and regulations, and conducts long-term planning related to air quality.

The Rancho Cordova portion of Sacramento County has been designated a nonattainment area for federal ozone and fine particulate matter (PM<sub>2.5</sub>) air quality standards (CARB 2015); therefore, the SMAQMD is required to submit air quality plans and rate-of-progress milestone evaluations in accordance with the federal Clean Air Act. The SMAQMD air quality attainment plans and reports, which include the Sacramento Regional 8-Hour Ozone 2011 Reasonable Further Progress Plan (2008) and subsequent Milestone Report (2011), the PM<sub>2.5</sub> State Implementation Plan (2013), and the PM<sub>10</sub> Implementation/Maintenance Plan and Re-Designation Request for Sacramento County (2010), present comprehensive strategies to reduce the ozone precursor pollutants (reactive organic gases [ROG] and nitrous oxides [NOx]) as well as particulate matter (PM) emissions from stationary, area, mobile, and indirect sources. The Sacramento Regional 8-Hour Ozone 2011 Reasonable Further Progress Plan includes information and analyses to fulfill Clean Air Act requirements for demonstrating reasonable further progress toward attaining the 8-hour ozone national ambient air quality standards (NAAQS) for the Sacramento region. In addition, this plan establishes an updated

emissions inventory and maintains existing motor vehicle emission budgets for transportation conformity purposes. The PM<sub>2.5</sub> State Implementation Plan attempts to fulfill the requirements of the US Environmental Protection Agency (EPA) to redesignate Sacramento County from nonattainment to attainment of the PM<sub>2.5</sub> NAAQS, and the PM<sub>10</sub> Implementation/Maintenance Plan and Re-Designation Request for Sacramento County attempts to maintain PM<sub>10</sub> attainment status.

According to SMAQMD guidance (2016), if the project results in a change in a designated land use and corresponding substantial increases in vehicle miles traveled (VMT), the resultant increase in VMT may be unaccounted for in regional emissions inventories contained in the regional air quality control plans described above, which are based on local planning documents and general plans. Substantial increases in VMT that are not accounted for in the emissions inventory of these air quality plans may conflict with these air quality plans and, therefore, contribute to the region's existing air quality nonattainment and/or maintenance status.

As described in subsection 10, Land Use and Planning, the project site is currently designated by the City of Rancho Cordova General Plan as Office Mixed Use (OMU). This designation encourages the integration of commercial and/or residential use in conjunction with office use; however, it also allows for public/quasi-public uses (City of Rancho Cordova 2006b). Therefore, the proposed project would be consistent with the existing land use designations for the site. According to KD Anderson, the proposed project would generate up to 564 daily trips on a weekday and up to 1,660 daily trips on a Saturday (KDA 2016c). The ITE Trip Generation Rates (9<sup>th</sup> Edition) for office is 11.03 daily trips per 1,000 square feet of building space. Assuming a 200,000-square-foot office use on the project site, approximately 2,206 daily trips would be generated. Therefore, the proposed soccer fields would have fewer trips than the office use and would generate proportionately fewer emissions. Furthermore, the project site is located on an infill parcel in an urbanized area of the city. This aspect of the project would result in the generation of a reduced amount of air pollutants relative to the land use assumed in the General Plan. According to the EPA (2011), infill developments produce 32 to 57 percent less air pollutant emissions per capita relative to conventional developments. This is because the number of daily vehicle trips and daily VMT associated with infill tend to be lower compared with development on greenfield land (EPA 2011).

The project would not result in a change in a designated land use, and therefore would not substantially increase VMT beyond that accounted for in the regional emissions inventories contained in the applicable regional air quality control plans. Therefore, the project would not conflict with the Sacramento Regional 8-Hour Ozone 2011 Reasonable Further Progress Plan, PM<sub>2.5</sub> State Implementation Plan, or the PM<sub>10</sub> Implementation/Maintenance Plan and Re-Designation Request for Sacramento County. The impact is less than significant.

### **Construction Emissions**

Three basic sources of short-term emissions would be generated by the proposed project: the operation of construction vehicles (i.e., excavators, trenchers, dump trucks), the creation of fugitive dust during clearing and grading, and the use of asphalt or other oil-based substances during paving activities. Construction activities, such as excavation and grading operations, construction vehicle traffic, and wind blowing over exposed soils, would generate exhaust emissions and fugitive particulate matter emissions, which would affect local air quality at various times during construction. Effects would vary



depending on the weather, soil conditions, the amount of activity taking place, and the nature of dust control efforts. The dry climate of the area during the summer months creates a high potential for dust generation.

Construction activities would be subject to SMAQMD Rule 403, which requires taking reasonable precautions to prevent fugitive dust emissions, such as using water or chemicals for dust control during construction operations, the construction of roadways, or the clearing of land, and application of asphalt, oil, water, or suitable chemicals on dirt roads, materials, stockpiles, and other surfaces that can give rise to airborne dust.

Emissions would vary from day to day, depending on the level of activity, the specific type of construction activity occurring, and, for fugitive dust, prevailing weather conditions. The construction air quality emissions are summarized in **Table 3**. The project's complete California Emissions Estimator Model (CalEEMod) emissions modeling software output spreadsheets are included in **Appendix C**.

**TABLE 3  
CONSTRUCTION-RELATED CRITERIA POLLUTANT AND PRECURSOR EMISSIONS (POUNDS PER DAY)**

Construction Phases	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO <sub>x</sub> )	Carbon Monoxide (CO)	Sulfur Dioxide (SO <sub>2</sub> )	Coarse Particulate Matter (PM <sub>10</sub> )	Fine Particulate Matter (PM <sub>2.5</sub> )
Construction	8.40	82.71	49.81	0.10	13.88	8.26
SMAQMD Potentially Significant Impact Threshold	—	85 pounds/day	—	—	If all feasible BACT/BMP applied, 80 pounds/day	If all feasible BACT/ BMP applied, 82 pounds/day
Exceed SMAQMD Threshold?	—	No	—	—	No	No

Source: CalEEMod version 2016.3.1. Refer to **Appendix C** for model data outputs.

Notes: Construction activities are anticipated to last two months. Emission projections account for the construction equipment summary shown in **Table 2**.

BACT = best available control technology

BMP = best management practices

As shown in **Table 3**, project emissions resulting from construction would not exceed the SMAQMD daily significance criterion for NO<sub>x</sub>, PM<sub>10</sub>, or PM<sub>2.5</sub>, with the implementation of mitigation measure **MM 3.1**. Mitigation measure **MM 3.1** requires best available control technology (BACT) and best management practices (BMPs) to be implemented. Construction-related air quality impacts will be considered less than significant with mitigation.

**Operational Emissions**

The SMAQMD has established significance thresholds to evaluate the potential impacts associated with long-term project operations. Regional air pollutant emissions associated with project operations include area source emissions, energy-use emissions, and mobile source emissions. Area source emissions comprise emissions from fuel combustion from space and water heating, landscape maintenance equipment, evaporative emissions from architectural coatings and consumer products, and unpermitted emissions from stationary sources. Energy-use emissions comprise emissions from on-site natural gas usage, and mobile source emissions comprise emissions from automobiles (e.g., trucks, cars, parking lot sweepers).

## ENVIRONMENTAL CHECKLIST

Operational area source emissions, energy-use emissions, and mobile source emissions for the proposed project were calculated using the CalEEMod air quality model (**Appendix C**). Emissions rates differ from summer to winter, because weather affects factors related to air quality, such as pollutant mixing/dispersion and ozone formation. As shown in **Table 4**, project emissions resulting from long-term operations would not exceed the SMAQMD significance criteria for ROG, NO<sub>x</sub>, PM<sub>10</sub>, or PM<sub>2.5</sub> (SMAQMD operational BACT and BMPs are not applicable to the proposed project). Therefore, operational-related air quality impacts will be considered less than significant.

**TABLE 4  
LONG-TERM UNMITIGATED OPERATIONAL EMISSIONS (POUNDS PER DAY)**

Operations	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO <sub>x</sub> )	Carbon Monoxide (CO)	Sulfur Dioxide (SO <sub>2</sub> )	Coarse Particulate Matter (PM <sub>10</sub> )	Fine Particulate Matter (PM <sub>2.5</sub> )
<b>Summer Emissions (Unmitigated)</b>						
Kilgore Soccer Fields	5.96	9.50	53.71	0.11	9.13	2.53
<b>Winter Emissions (Unmitigated)</b>						
Kilgore Soccer Fields	4.45	10.83	51.62	0.10	9.13	2.53
SMAQMD Potentially Significant Impact Threshold	65 pounds/day	65 pounds/day	—	—	If all feasible BACT/BMP applied, 80 pounds/day	If all feasible BACT/ BMP applied, 82 pounds/day
<b>Exceed SMAQMD Threshold?</b>	<b>No</b>	<b>No</b>	—	—	<b>No</b>	<b>No</b>

Source: CalEEMod version 2016.3.1. Refer to **Appendix C** for model data outputs.

Note: BACT = best available control technology

BMP = best management practices

- c) **Less Than Significant Impact.** Because of the region's nonattainment status for ozone and PM, the SMAQMD considers projects that are consistent with all applicable air quality plans intended to bring the basin into attainment for all criteria pollutants, and below SMAQMD significance thresholds of the ozone precursor pollutants (i.e., ROG and NO<sub>x</sub>), to have less than significant cumulative impacts. As discussed in Issue a,b), the proposed project would not conflict with the Sacramento Regional 8-Hour Ozone 2011 Reasonable Further Progress Plan, the PM<sub>2.5</sub> State Implementation Plan, or the PM<sub>10</sub> Implementation/Maintenance Plan and Re-Designation Request for Sacramento County, since the proposed project is consistent with the existing land use designations for the site and, therefore, accounted for in the emissions inventory of these air quality plans. Furthermore, the project site is located on an infill parcel in an urbanized area of the city, and this aspect of the project would result in the generation of a reduced amount of air pollutants from mobile sources relative to the land use assumed in the General Plan. As also discussed in Issue a,b), predicted long-term operational emissions attributable to the proposed project would not exceed SMAQMD significance thresholds. Therefore, since the project would not conflict with applicable air quality plans or exceed SMAQMD significance thresholds, cumulative impacts would be less than significant per the SMAQMD significance threshold. The project's contribution would not be cumulatively considerable.

- d) **Less Than Significant Impact With Mitigation Incorporated.** Sensitive land uses are generally defined as locations where people reside or where the presence of air emissions could adversely affect the use of the land. Typical sensitive receptors include residents, schoolchildren, hospital patients, and the elderly. There are two facilities for schoolchildren located within one-quarter mile of the site. Playology is a drop-in child care facility at 3084 Sunrise Boulevard, approximately 0.18 miles (950 feet) northeast of the site, and Children First Learning Center is a day care and after-school program at 3039 Kilgore Road, approximately 0.24 miles (1,267 feet) north of the site.

### **Air Toxics**

Construction activities would involve the use of a variety of gasoline- and diesel-powered equipment that emits exhaust fumes. Sensitive receptors in the project vicinity could be exposed to nuisance dust and heavy equipment emissions (i.e., diesel exhaust) during construction. The amount to which the receptors are exposed (a function of concentration and duration of exposure) is the primary factor used to determine health risk (i.e., potential exposure to toxic air contaminant emission levels that exceed applicable standards). Construction activities would be subject to SMAQMD Rule 403, which requires taking reasonable precautions, such as using water or chemicals for dust control during construction operations, to prevent the emissions of the air toxics and fugitive particulate matter. Implementation of Rule 403 would ensure the project would result in less than significant dust-related impacts during construction. Health-related risks associated with diesel-exhaust emissions are primarily linked to long-term exposure and the associated risk of contracting cancer. Current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 30, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities. Nonetheless, due to the project site's proximity to a drop-in child care facility and a day care and after-school program and the increased sensitivity of young children, mitigation measures **MM 3.2** and **MM 3.3** are required. Implementation of mitigation measures **MM 3.2** and **MM 3.3** would reduce the amount of construction-generated pollutants by requiring use of late model engines (CARB Tier 3 Certified or better). Tier 3 construction equipment can reduce emissions of PM and NOx by about 20 percent. Therefore, construction impacts will be considered less than significant.

Operation of the proposed soccer fields would not result in the development of any substantial sources of air toxics. However, recreational soccer fields could be considered to be a sensitive receptor itself.

In April 2005, the California Air Resources Board (CARB) released the Air Quality and Land Use Handbook: A Community Health Perspective, which offers guidance on developing sensitive land uses in proximity to sources of air toxics. One particular source of air toxics treated in the guidance is freeways and major roadways. These roadways are sources of diesel PM, which CARB has listed as a toxic air contaminant. The handbook recommends that sensitive land uses be sited no closer than 500 feet from a freeway or major roadway. This 500-foot buffer area was developed to protect sensitive receptors from exposure to diesel PM and was based on traffic-related studies that showed a 70 percent drop in PM concentrations at a distance of 500 feet from the roadway. Presumably, acute and chronic risks, as well as lifetime cancer risk, due to diesel PM exposure are lowered proportionately. The project site is not within 500 feet of any highway or interstate (US Highway 50 is located more than 3,600 feet [0.7 miles] northwest of the site). There are no major roadways within 500 feet of the project site. Therefore, the site lies beyond the CARB-

recommended buffer area, and future receptors would not be negatively affected by toxic air contaminants generated on a highway or interstate. Furthermore, there are no major stationary sources of toxic air contaminants identified in the vicinity of the site that could potentially affect future on-site sensitive receptors (CHAPIS 2004; EPA 2013).

### **Carbon Monoxide Hotspots**

Carbon monoxide (CO) concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hotspots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. Modeling is therefore typically conducted for intersections that are projected to operate at unacceptable levels of service during peak commute hours.

The SMAQMD (2011) provides a project-level screening procedure to determine whether detailed CO hotspot modeling is required for a proposed development project. This preliminary screening methodology provides lead agencies with a conservative indication of whether project-generated vehicle trips would result in the generation of CO emissions that contribute to an exceedance of the thresholds of significance. According to the SMAQMD, the proposed project would result in a less than significant impact to air quality for local carbon monoxide if:

- Traffic generated by the proposed project would not result in deterioration of intersection level of service (LOS) to LOS E or F;<sup>1</sup> or
- The project would not contribute additional traffic to an intersection that already operates at LOS of E or F.

As stated in Issue a) of subsection 16, Transportation/Traffic, the proposed project would not result in any significant traffic impacts. Therefore, this impact is considered less than significant.

The proposed project would result in less than significant impacts concerning the exposure of people to substantial amounts of air pollutant concentrations.

### Mitigation Measures

**MM 3.1** The following practices are considered feasible for controlling fugitive dust from a construction site. Control of fugitive dust is required by District Rule 403 and enforced by SMAQMD staff.

- Water all exposed surfaces two times daily. Exposed surfaces include but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover or maintain at least 2 feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.

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<sup>1</sup> Level of service (LOS) is a measure used by traffic engineers to determine the effectiveness of transportation infrastructure. LOS is most commonly used to analyze intersections by categorizing traffic flow with corresponding safe driving conditions. LOS A is considered the most efficient level of service and LOS F the least efficient.

- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Limit vehicle speeds on unpaved roads to 15 miles per hour.
- All roadways, driveways, sidewalks, and parking lots to be paved should be completed as quickly as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.

The following practices describe exhaust emission control from diesel-powered fleets working at a construction site. California regulations limit idling from both on-road and off-road diesel powered equipment. CARB enforces the idling limitations.

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [required by California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.

Although not required by local or state regulations, many construction companies have equipment inspection and maintenance programs to ensure work and fuel efficiencies.

- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.

*Timing/Implementation: During all grading and construction within the project area*

*Enforcement/Monitoring: City of Rancho Cordova Planning Department; Sacramento Metropolitan Air Quality Management District; California Air Resources Board*

**MM 3.2** The project construction contractor shall provide a plan for approval by the SMAQMD demonstrating that the heavy-duty (50 horsepower or more) off-road vehicles to be used in the construction of the project, including owned, leased, and subcontractor vehicles, will achieve a project-wide fleet-average 20 percent NO<sub>x</sub> reduction and 45 percent particulate reduction compared to the most recent California Air Resources Board fleet average. Acceptable options for reducing emissions may include use of late model engines (CARB Tier 3 Certified or better<sup>2</sup>), low-emission diesel products, alternative fuels, engine retrofit

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<sup>2</sup> NO<sub>x</sub> emissions are primarily associated with use of diesel-powered construction equipment (e.g., graders, excavators, rubber-tired dozers, tractor/loader/backhoes). The Clean Air Act of 1990 directed the EPA to study, and regulate if warranted, the contribution of off-road internal combustion engines to urban air pollution. The first federal standards (Tier 1) for new off-road diesel engines were adopted in 1994 for engines over 50 horsepower and were phased in from 1996 to 2000. In 1996, a Statement of Principles pertaining to off-road diesel engines was signed between the EPA, CARB, and engine makers (including Caterpillar, Cummins, Deere, Detroit Diesel, Deutz, Isuzu, Komatsu, Kubota, Mitsubishi, Navistar, New Holland, Wis-Con, and Yanmar). On August 27, 1998, the EPA signed the final rule reflecting the provisions of the Statement of Principles. The 1998 regulation introduced Tier 1 standards for equipment under 50 horsepower and increasingly more stringent Tier 2

## ENVIRONMENTAL CHECKLIST

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technology, after-treatment products, and/or other options as they become available.

*Timing/Implementation:* Plan shall be submitted to the SMAQMD for review and approval prior to approval of improvement plans and shall be implemented during all grading and construction within the project area

*Enforcement/Monitoring:* City of Rancho Cordova Planning Department; Sacramento Metropolitan Air Quality Management District

**MM 3.3** The project construction contractor shall ensure that emissions from all off-road diesel-powered equipment used do not exceed 40 percent opacity for more than 3 minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately. Noncompliant equipment shall be documented and a monthly summary provided to the City Planning Department and the SMAQMD. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual survey results shall be submitted throughout the duration of construction, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed and the dates of each survey. The SMAQMD and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this measure shall supersede other SMAQMD or state rules or regulations.

*Timing/Implementation:* During all grading and construction within the project area

*Enforcement/Monitoring:* City of Rancho Cordova Planning Department; Sacramento Metropolitan Air Quality Management District

e) **No Impact.** According to the SMAQMD, land uses commonly considered to be potential sources of obnoxious odorous emissions include wastewater treatment plants, sanitary landfills, composting/green waste facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting/coating operations, rendering plants, and food packaging plants. Implementation of the proposed project would not result in the development or long-term operation of any on-site sources of obnoxious odors due to its nature as a soccer facility. No impact would occur.

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and Tier 3 standards for all equipment with phase-in schedules from 2000 to 2008. As a result, all off-road, diesel-fueled construction equipment manufactured in 2006 or later has been manufactured to Tier 3 standards.

## ENVIRONMENTAL CHECKLIST

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>4. BIOLOGICAL RESOURCES.</b> 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 Wildlife or US Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" 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, or regulations, or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 wetlands, etc.), through direct removal, filling, hydrological interruption, or other means?	<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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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"/>

This section describes the natural resources present within and immediately surrounding the project site and includes a discussion of the special-status species and sensitive habitats potentially occurring in the area. Also included is an analysis of impacts that could occur to biological resources due to implementation of the proposed project and appropriate mitigation measures to reduce or avoid those impacts. The analysis of biological resources presented in this section is based on a review of the current project description, database searches, aerial habitat assessment, other available literature, and a site visit conducted by a biologist on October 12, 2016.

## ENVIRONMENTAL CHECKLIST

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### ENVIRONMENTAL SETTING

A review of available data and literature from local, state, federal, and nongovernmental agencies was conducted regarding habitat suitability for special-status species.

Database searches were performed on the following websites:

- US Fish and Wildlife Service's (USFWS) Information, Planning, and Conservation (IPaC) System (2016a)
- USFWS's Critical Habitat Portal (2016b)
- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB) (2016a)
- California Native Plant Society's (CNPS) Inventory of Rare, Threatened, and Endangered Plants of California (2016)

A search of the USFWS's IPaC System was performed to identify any federally protected species and their habitat within the project site that could be affected by the proposed project. In addition, a query of the CNDDDB was conducted for the Carmichael US Geological Survey (USGS) 7.5-minute quadrangle (quad) and all adjacent quads (Citrus Heights, Folsom, Buffalo Creek, Sloughhouse, Elk Grove, Florin, Sacramento East, and Rio Linda) to identify known processed and unprocessed occurrences for special-status species. The CNPS database was also queried to identify any special-status plant species with the potential to occur within the aforementioned quads. Raw data from the database queries can be found in **Appendix D**.

The proposed project is located in the City of Rancho Cordova in Sacramento County. The project site is relatively flat at approximately 114 feet above mean sea level (msl). The surrounding area consists of dense urban land uses including mixed residential and commercial. The Folsom South Canal is located just east of the project site.

Soils in the project site include Xerorthents, dredge tailings, 2 to 50 percent slopes and Xerorthents, dredge tailings – urban land complex, 0 to 2 percent slopes (USDA 2016). These soils are derived from mine soil or earthy fill. They are somewhat excessively drained soils with over 80 inches to the restrictive feature.

### REGULATORY SETTING

#### **Federal**

#### Endangered Species Act

The Endangered Species Act of 1973 (ESA), as amended, provides protective measures for federally listed threatened and endangered species, including their habitats, from unlawful take (16 United States Code (USC) Sections 1531–1544). The ESA defines "take" to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Title 50, Part 222, of the Code of Federal Regulations (50 CFR Section 222) further defines "harm" to include "an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns including feeding, spawning, rearing, migrating, feeding, or sheltering."



ESA Section 7(a)(1) requires federal agencies to utilize their authority to further the conservation of listed species. ESA Section 7(a)(2) requires consultation with the USFWS or the National Marine Fisheries Service (NMFS) if a federal agency undertakes, funds, permits, or authorizes (termed the federal nexus) any action that may affect endangered or threatened species, or designated critical habitat. For projects that may result in the incidental take of threatened or endangered species, or critical habitat, and that lack a federal nexus, a Section 10(a)(1)(b) incidental take permit can be obtained from the USFWS and/or the NMFS.

### Migratory Bird Treaty Act

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) of 1918 (16 USC Sections 703–711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Section 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR Section 21). The majority of birds found in the project vicinity would be protected under the MBTA.

### Executive Order 13112 – Invasive Species

This executive order directs all federal agencies to refrain from authorizing, funding, or carrying out actions or projects that may spread invasive species. The order further directs federal agencies to prevent the introduction of invasive species, control and monitor existing invasive species populations, restore native species to invaded ecosystems, research and develop prevention and control methods for invasive species, and promote public education on invasive species. As part of the proposed action, the USFWS and the US Army Corps of Engineers would issue permits and therefore would be responsible for ensuring that the proposed action complies with Executive Order 13112 and does not contribute to the spread of invasive species.

## **State**

### California Endangered Species Act

Under the California Endangered Species Act (CESA), the CDFW has the responsibility for maintaining a list of endangered and threatened species (Fish and Game Code [FGC] Section 2070). The CDFW also maintains a list of candidate species, which are species formally noticed as being under review for potential addition to the list of endangered or threatened species, and a list of species of special concern, which serve as species “watch lists.”

Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present and determine whether a proposed project will have a potentially significant impact on such species. In addition, the CDFW encourages informal consultation on any proposed project that may impact a candidate species.

Project-related impacts to species on the CESA endangered or threatened lists would be considered significant. State-listed species are fully protected under the mandates of the CESA. Take of protected species incidental to otherwise lawful management activities may be authorized under FGC Section 206.591. Authorization from the CDFW would be in the form of an incidental take permit.

## ENVIRONMENTAL CHECKLIST

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### California Fish and Game Code

#### *Birds of Prey*

Under FGC Section 3503.5, it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.

#### *Fully Protected Species*

California statutes also afford fully protected status to a number of specifically identified birds, mammals, reptiles, and amphibians. These species cannot be taken, even with an incidental take permit. FGC Sections 3505, 3511, 4700, 5050, and 5515 protect from take a number of fully protected birds, mammals, reptiles, amphibians, and fish.

### **Local**

#### City of Rancho Cordova Tree Preservation and Protection Ordinance

Chapter 19.12 of the City of Rancho Cordova Municipal Code identifies specific measures to protect trees (native oak trees) in the City of Rancho Cordova.

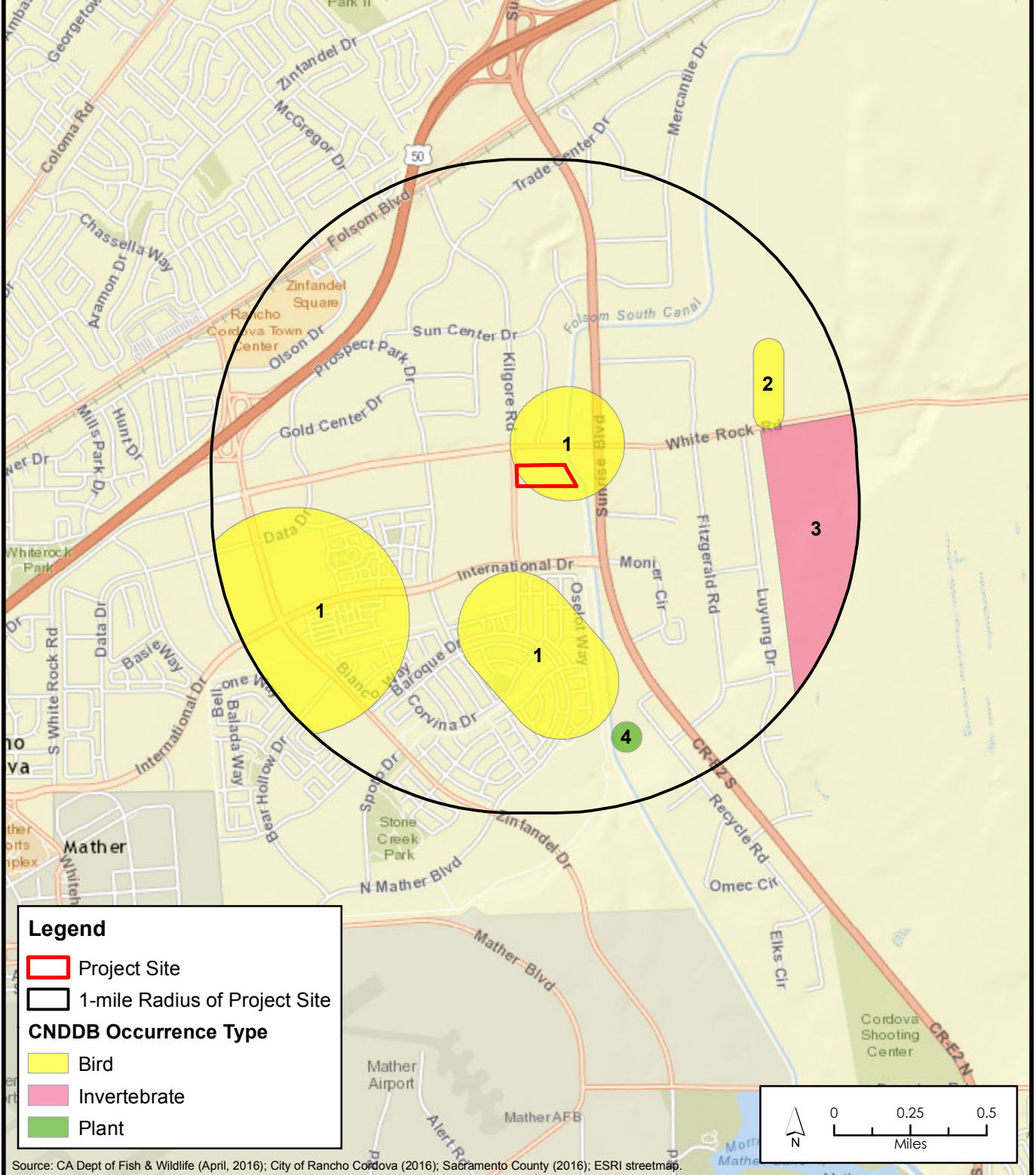
### DISCUSSION OF IMPACTS

a) **Less Than Significant Impact with Mitigation Incorporated.** Candidate, sensitive, or special-status species are commonly characterized as species that are at potential risk to their persistence in a given area or across their range. These species have been identified and assigned a status ranking by governmental agencies such as the CDFW and the USFWS, and nongovernmental organizations such as the CNPS. The degree to which a species is at risk of extinction is the determining factor in the assignment of a status ranking. Some common threats to a species' or population's persistence include habitat loss, degradation, and fragmentation, as well as human conflict and intrusion. For the purposes of this biological review, special-status species are defined by the following codes:

- Listed, proposed, or candidates for listing under the federal Endangered Species Act (50 CFR 17.11 – listed; 61 Federal Register 7591, February 28, 1996, candidates)
- Listed or proposed for listing under the California Endangered Species Act (FGC 1992 Section 2050 et seq.; 14 California Code of Regulations [CCR] Section 670.1 et seq.)
- Designated as Species of Special Concern by the CDFW
- Designated as Fully Protected by the CDFW (FGC Sections 3511, 4700, 5050, and 5515)
- Species that meet the definition of rare or endangered under CEQA (14 CCR Section 15380) including CNPS List Rank 1B and 2

The query of the USFWS, CNPS, and CNDDDB databases identified habitat for several special-status species with the potential to occur in the project site. Refer to **Figure 6** for a depiction of CNDDDB occurrences within 1 mile of the project site. A list of special-status species identified in the project site along with habitat requirements for each species, and conclusions regarding the potential for each species to be impacted by the proposed project, can be found in **Appendix D**.

Map ID	Scientific Name	Common Name	Federal Listing	State Listing	Rare Plant Rank
1	<i>Agelaius tricolor</i>	tricolored blackbird	None	None	
2	<i>Buteo swainsoni</i>	Swainson's hawk	None	Threatened	
3	<i>Desmocerus californicus dimorphus</i>	valley elderberry longhorn beetle	Threatened	None	
4	<i>Sagittaria sanfordii</i>	Sanford's arrowhead	None </td <td>None</td> <td>1B.2</td>	None	1B.2



**Figure 6**  
CNDDB Occurrences of Special-Status Species  
Within 1 Mile of Project Site



### **Special-Status Plant Species**

Based on the results of the database search and the habitat on the project site, there are no special-status plant species with the potential to occur in the project site.

### **Special-Status Animal Species**

Based on the results of the database search and the habitat on the project site, 11 special-status wildlife species have the potential to occur in the vicinity of the project site: grasshopper sparrow (*Ammodramus savannarum*), western burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), ferruginous hawk (*Buteo regalis*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), prairie falcon (*Falco mexicanus*), merlin (*Falco columbarius*), pallid bat (*Antrozous pallidus*), western red bat (*Lasiurus blossevillii*), and American badger (*Taxidea taxus*).

#### **Grasshopper Sparrow**

The grasshopper sparrow is a California species of special concern; it has no federal status. Grasshopper sparrows generally prefer fairly open short grasslands with scattered shrubs. Habitat requirements differ between regions; however, they will frequently occur in ecotone habitats between grasslands and sage-scrub habitats or bunch grasses in some areas. Nesting occurs in grasses low to the ground and well-concealed (Shuford and Gardali 2008).

There is one occurrence of this species within 10 miles of the project site (CDFW 2016a). The ruderal grasslands in the project site provide potentially suitable foraging and nesting habitat for this species. Therefore, this species has the potential to occur in the project site.

Implementation of mitigation measures **MM 4.1** and **MM 4.2** will reduce potentially significant impacts to grasshopper sparrow to less than significant by minimizing the area of disturbance during construction, providing a Worker Environmental Awareness Program (WEAP), and requiring a preconstruction survey for nesting birds prior to the start of construction as well as establishing necessary buffers if active nests are located.

#### **Western Burrowing Owl**

The western burrowing owl is a California species of special concern; it has no federal status. Western burrowing owls prefer nesting in mammal burrows in open areas of dry, open, rolling hills, grasslands, fallow fields, sparsely vegetated desert scrub with gullies, washes, arroyos, and along the edges of human disturbed lands. This species can also be found inhabiting golf courses, airports, cemeteries, vacant lots, and road embankments with friable soils for nesting. The elevation range for this species extends from 200 feet (60 meters) below msl to 12,000 feet (3,636 meters) above msl at the Dana Plateau in Yosemite (Bates 2006).

No small burrows were identified in the project site during a reconnaissance site visit on October 12, 2016. In addition, the short to moderately high grasses on the project site provide weak nesting habitat because western burrowing owls typically require short vegetation with only sparse shrubs and taller vegetation (Shuford and Gardali 2008; CDFW 2012). However, there may be friable soils present and there are six documented occurrences of this species within 3 miles of the project site. Therefore, this species may occur, but is not likely to occur within the project site.

Implementation of mitigation measures **MM 4.1**, **MM 4.2**, and **MM 4.4** will reduce impacts to western burrowing owl to less than significant by minimizing the area of disturbance during construction, providing a WEAP, and requiring a preconstruction survey for nesting birds prior to the start of construction as well as establishing necessary buffers if active nests are located.

### **Other Raptors and Migratory Bird Species**

Various raptors and migratory birds have the potential to inhabit the project site. Swainson's hawk and white-tailed kite are afforded additional protection under state laws. Swainson's hawk is listed in California as a threatened species under the CESA. The white-tailed kite is a California fully protected species.

Some raptor and migratory bird species, such as ferruginous hawk, northern harrier, prairie falcon, and merlin, are not considered special-status species because they are not rare or protected under the ESA or CESA; however, the nests of all raptor species are protected under the MBTA and Section 3503.5 of the FGC. The nests of all migratory birds are protected under the MBTA, which makes it illegal to destroy any active migratory bird nest. The project site contains a small group of trees which may provide suitable nesting habitat for migratory birds and some raptors that occur in the region. The ruderal grasslands provide potential foraging and nesting habitat for migratory birds and possibly western burrowing owl. The removal of trees, vegetation, and ground-disturbing activities may impact these species.

If nesting migratory birds and/or raptors are present during project construction, the proposed project may cause direct mortality through removal of trees and vegetation or ground-disturbing activities. Excessive noise, disturbance, and vibrations can cause nesting raptors and birds to abandon their nests. The loss of active nests or direct mortality is prohibited by the MBTA and FGC Section 3503.5. The proposed project could result in indirect impacts to migratory birds and raptors through habitat degradation and removal of trees/shrubs suitable for nesting, as well as from increased human presence.

Implementation of mitigation measures **MM 4.1** through **MM 4.4** will reduce any potentially significant impacts to nesting migratory birds and raptors to less than significant by minimizing the area of disturbance during construction, providing a WEAP, and requiring a preconstruction survey for nesting birds prior to the start of construction as well as establishing necessary buffers if active nests are located.

### **Special-Status Bat Species**

Special-status bat species, including the pallid bat and western red bat, could inhabit the area within the vicinity of the project site. These species are widely distributed throughout California; however, many of these species are rare within their overall ranges. Bats require foraging habitat, night roosting cover, day roosting sites, maternity roost sites, and winter hibernacula. These bat species may forage within a variety of habitats, including annual grasslands, agricultural lands, and wetland habitats. Suitable roosting sites within these habitats include caves, rock crevices, cliffs, buildings, tree bark, and snags. Some or all of these bat species are likely to forage in the vicinity of the project site. The small group of trees on the project site does not provide ideal roosting habitat for special-status bats; however, there is still potential for pallid bat and western red bat to roost in these trees.

Implementation of mitigation measure **MM 4.5** will reduce impacts to special-status bat species to less than significant by requiring work to occur during daylight hours only and, if bats are observed foraging during daylight hours, ceasing construction activities until bats are no longer observed in the area. In addition, mitigation measure **MM 4.5** requires preconstruction surveys for bat-roosting colonies and flushing of roosts during the appropriate season, establishing work buffers for active maternity roosts, and excluding bats from the project site if roosts are located.

### **American Badger**

The American badger is a California species of special concern; it has no federal listing. This species is found throughout the state except in the north coast area. The American badger prefers grasslands and savannah habitats with friable soils, but is also found in open scrub and woodland habitats. It requires an abundant source of burrowing mammals such as ground squirrels and gophers for sustenance. They rarely occur in urbanized areas with frequent human presence or on cultivated land.

There is one occurrence of American badger approximately 3 miles from the project site (CDFW 2016a). The project site consists of ruderal grassland with frequent nearby human disturbance and activity. This species prefers open undisturbed areas and is not known to occur in areas with human presence. Therefore, although there is open habitat with one nearby occurrence, this species is not likely to occur in the project site due to the presence of human activity in a heavily urbanized area.

- b) **Less Than Significant Impact With Mitigation Incorporated.** Sensitive habitats include areas of special concern to resource agencies, areas protected under the CESA, areas designated as sensitive natural communities by the CDFW, areas outlined in FGC Section 1600, areas regulated under Section 404 of the federal Clean Water Act, and areas protected under local regulations and policies.

Annual grassland is considered a special-status community in the sense that it provides foraging habitat for the state-threatened Swainson's hawk and is protected under the CESA. Implementation of project-related activities may result in adverse impacts to sensitive natural communities. According to the CDFW's Staff Report Regarding Mitigation for Impacts to Swainson's Hawk (*Buteo swainsoni*) in the Central Valley of California (CDFW 1994), loss of foraging habitat within 1 mile of active Swainson's hawk nests calls for mitigation in the form of providing 1 acre of habitat management lands for every 1 acre of foraging habitat lost. Any permanent conversion of pasture or annual grassland on the project site will result in a loss of foraging habitat. The nonnative grassland community could be considered sensitive as it provides foraging habitat for state-threatened Swainson's hawk, and there is a documented occurrence of Swainson's hawk within 1 mile of the project site. The proposed project would convert or permanently remove 8.9 acres of nonnative grassland (this total takes into account the capped area), which would be considered a potentially significant impact to foraging habitat for Swainson's hawk; however, implementation of mitigation measure **MM 4.3** will reduce those impacts to a less than significant level by preserving foraging habitat at a 1:1 ratio for any habitat converted.

- c) **Less Than Significant Impact.** No jurisdictional waters, protected wetlands, or other Waters of the US have been identified on-site. The Folsom South Canal is located approximately 100 feet east of the project site. However, the site is separated from the canal by a ditch and roadway and the edge of the canal has been constructed to create a raised brim, which would impede drainage flows from entering the canal. Thus, the proposed project will not

## ENVIRONMENTAL CHECKLIST

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impact the canal. In addition, the project would be required to implement a stormwater pollutant prevention plan (SWPPP) that includes BMPs to reduce impacts to water quality and hydrology. Therefore, there would be no impact to any jurisdictional waters or other Waters of the U.S.

- d) **No Impact.** Available data on movement corridors and linkages was accessed via the CDFW (2016b) BIOS Viewer. Data reviewed included the Essential Connectivity Areas [ds623] layer and the Missing Linkages in California [ds420] layer. The project site is not located within an identified migratory or essential connectivity corridor. In addition, the project is surrounded by urban land uses which further inhibits migratory wildlife functions. As such, no impact is anticipated, and no additional avoidance and minimization measures are proposed.
- e) **No Impact.** The proposed project would not remove any trees protected under a tree ordinance or other local preservation policy. The project site contains a small group of trees planned for removal. There are no live oak trees in the project site, and none of the trees in the project site are protected under Chapter 19.12 of the City's Municipal Code. Therefore, the project would not conflict with any local policies or ordinances and there would be no impact.
- f) **No Impact.** The proposed 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. The project site is within the South Sacramento Habitat Conservation Plan Area; however, this plan has not been adopted to date. There are no other conservation plans applicable to the proposed project. As a result, the proposed project would not conflict with any plan, and no impact is anticipated. No avoidance and minimization measures are proposed.

### Mitigation Measures

**MM 4.1**                    **Conduct Environment Awareness Training for Construction Employees.** A Worker Environmental Awareness Program (WEAP) shall be implemented to educate construction workers about the presence of special-status species and sensitive biological resources in and/or near the project site and to instruct them on proper avoidance.

*Timing/Implementation:*            *Prior to project construction*

*Enforcement/Monitoring:*        *City of Rancho Cordova Planning Department*

**MM 4.2**                    **Nesting Migratory Birds and Raptors.** If clearing and/or construction activities will occur during the migratory bird nesting season (February 1–September 1), preconstruction surveys to identify active migratory bird nests shall be conducted by a qualified biologist within 14 days prior to construction initiation. Focused surveys must be performed by a qualified biologist for the purposes of determining the presence/absence of active nest sites within the proposed impact area, including construction access routes and a 200-foot buffer (if feasible).

If migratory bird nests are identified within 200 feet of project activities, the applicant will impose a 150-foot setback to all active migratory bird nest sites prior to commencement of project construction activities to avoid



construction or access-related disturbances to nesting birds. Project-related activities (e.g., vegetation removal, earth moving, and construction) shall not occur within any setbacks until nests are deemed inactive. Activities permitted within setbacks and the size of setbacks may be adjusted through consultation with the CDFW and/or the City.

If clearing and/or construction activities would occur during the raptor nesting season (February 15–September 15), preconstruction surveys to identify active nests shall be conducted by a qualified biologist within 14 days prior to construction initiation. Surveys must be performed by a qualified biologist for the purposes of determining presence/absence of active nest sites in the proposed impact area, including construction access routes and a 250-foot buffer. If no active nests are found, no further mitigation is required. Surveys shall be repeated if construction activities are delayed or postponed for more than 30 days.

If an active nest is located during preconstruction surveys, construction activities shall be restricted to avoid disturbance of the nest until it is abandoned or a qualified biologist deems disturbance potential to be minimal. Restrictions may include establishment of exclusion buffer zones within which no personnel or equipment will be allowed. Buffer zones will occur at a minimum radius of 100 feet (30 meters) around an active raptor nest and a 50-foot (15-meter) radius around an active migratory bird nest. Activities permitted in exclusion zones and the size may be adjusted through consultation with the CDFW and/or the City.

Trees containing active migratory bird and/or raptor (excluding Swainson’s hawk) nests that must be removed as a result of project implementation shall be removed during the non-breeding season (September 1–January 1). Swainson’s hawks are state and federally listed as threatened species; therefore, impacts to Swainson’s hawk nest trees require regulatory authorization from the CDFW prior to removal.

*Timing/Implementation:* Prior to project construction

*Enforcement/Monitoring:* City of Rancho Cordova Planning Department

**MM 4.3**

**Swainson’s Hawk Foraging Habitat Mitigation.** Prior to any construction activities, the applicant shall obtain Swainson’s hawk foraging habitat mitigation at a ratio of 1 acre for each 1 acre of suitable foraging habitat converted. “Suitable foraging habitat” consists of row crops, forage crops, pasture, grasslands, or fallow fields that would be affected by construction activities. The applicant shall mitigate for loss of Swainson’s hawk foraging habitat through (1) payment of in-lieu fee for off-site preservation of foraging habitat to a resource agency or a third-party organization acceptable to a resource agency, or (2) acquisition of an irrevocable instrument (e.g., deed restriction or easement) for preservation of foraging habitat on a property that provides habitat of equal or greater quality.

*Timing/Implementation:* Prior to project construction

*Enforcement/Monitoring:* City of Rancho Cordova Planning Department

**MM 4.4**            **Western Burrowing Owl.** If an active burrowing owl nest is located during preconstruction surveys, the City shall consult with the CDFW and implement the avoidance, minimization, and mitigation measures outlined in the Staff Report on Burrowing Owl Mitigation (CDFW 2012). Potential measures to reduce impacts may include restricting construction activities as necessary to avoid disturbance of the nest until it is abandoned or a qualified biologist deems disturbance potential to be minimal. Restrictions may include establishment of exclusion buffer zones within which no personnel or equipment will be allowed. Buffer zones will occur at a minimum radius of 164 feet (50 meters) of the burrow, or other CDFW-approved distance. Other restrictions may include passive relocation, which includes the installation of one-way doors on all burrows during the non-breeding season (September 1–January 31) to allow owls to exit but not reenter. Burrowing owl exclusions during the breeding season (February 1–August 31) may only be used if a qualified biologist verifies that the burrow does not contain eggs or dependent young. If active burrows contain eggs and/or young, no construction shall occur within a minimum of 164 feet (50 meters) of the burrow until young have fledged.

*Timing/Implementation:*            *Prior to project construction*

*Enforcement/Monitoring:*            *City of Rancho Cordova Planning Department*

**MM 4.5**            **Special-Status Bats.** Construction activities shall occur during daylight hours. If bats are observed foraging during daylight hours, construction activities shall cease until bats are no longer observed in the area.

Prior to the removal of any trees on the project site between March 1 and July 31, a bat survey shall be performed by a qualified biologist within 14 days prior to tree removal. If bat roosts are identified, the City shall require that the bats be safely flushed from the sites where roosting habitat is planned to be removed prior to roosting season (typically May to August) and prior to the onset of construction activities. If maternity roosts are identified during the maternity roosting season (typically May through August), they must remain undisturbed until a qualified biologist has determined that the young bats are no longer roosting. If roosting is found to occur on-site, replacement roost habitat (e.g., bat boxes) shall be provided to offset roosting sites removed. If no bat roosts are detected, no further action is required if the trees are removed prior to the next breeding season. If removal is delayed, an additional survey shall be conducted 30 days prior to removal to ensure that a new colony has not established itself.

If a female or maternity colony of bats are found on the project site, and the project can be constructed without the elimination or disturbance of the roosting colony (e.g., if the colony roosts in a large tree not planned for removal), a qualified biologist shall determine what buffer zones shall be employed to ensure the continued success of the colony. Such buffer zones may include a construction-free barrier of 200 feet from the roost and/or the timing of the construction activities outside of the maternity roost season (after August 31 and before May 1).

If an active nursery roost is documented on-site and the project cannot be constructed outside of the maternity roosting season, bats shall be excluded

from the site after August 31 and before May 1 to prevent the formation of maternity colonies. Non-breeding bats shall be safely evicted, under the direction of a bat specialist.

*Timing/Implementation:*      *During project construction*

*Enforcement/Monitoring:*      *City of Rancho Cordova Planning Department*

**ENVIRONMENTAL CHECKLIST**

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>5. CULTURAL RESOURCES.</b> Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**DISCUSSION OF IMPACTS**

a) **Less Than Significant Impact.** The project site is vacant with the exception of some remnants of building foundations associated with the former oil reprocessing facility which date from approximately the 1950s. Given the current condition of these remnants and the fact that the former use was not unique or significant to the history of the region, they are not considered to be a significant historical resource. Furthermore, the site was not identified in the City’s General Plan Cultural and Historic Resources Element as part of the City’s historic resources setting. The remnants would be removed as part of project implementation. This impact would be less than significant.

b,d) **Less Than Significant Impact With Mitigation Incorporated.** Implementation of the proposed project would include ground-disturbing construction activities on a project site that has previously been heavily disturbed. However, construction activities may uncover previously undiscovered archaeological and/or tribal cultural resources. This would be a potentially significant impact. Implementation of mitigation measure **MM 5.1** would reduce this potentially significant impact to a less than significant level by requiring work to halt if a resource is encountered and for the resource to be properly managed under the direction of a qualified archaeologist.

Letters requesting consultation with the applicable Native American tribes were mailed on May 9, 2016, in compliance with Assembly Bill (AB) 52. The City received one response from the United Auburn Indian Community of the Auburn Rancheria on July 14, 2016, declining to initiate consultation with the City under AB 52 (see **Appendix E**).

c) **Less Than Significant Impact.** The project site is not known or expected to contain human remains. While not anticipated, project-related construction activities would have the potential to disturb previously undiscovered human remains. Implementation of mitigation measure **MM 5.2** would reduce this potentially significant impact to a less than significant level by requiring work to halt if human remains are encountered and for the remains to be properly managed consistent with existing state law and/or, if the remains are determined to be of Native American origin, in consultation with the Most Likely Descendent (MLD).

Mitigation Measures

**MM 5.1** If archaeological resources (i.e., historic, prehistoric, and isolated artifacts and features) or tribal cultural resources are inadvertently discovered during project construction, work shall be halted immediately within 50 feet of the discovery, the City shall be notified, and a professional archaeologist that meets the Secretary of the Interior’s Standards and Guidelines for Professional Qualifications in archaeology and/or history shall be retained to evaluate the discovery. In the case of tribal cultural resources, the Native American Heritage Commission shall also be contacted in order to identify and initiate consultation with the tribe(s) that is traditionally and culturally affiliated with the project area. The archaeologist, in consultation with the appropriate tribe(s) if applicable, shall prepare and submit to the City a report that includes a list of the resources discovered, documentation of each site/locality, interpretation of the resources identified, and the recommended method of preservation and/or recovery for identified resources. In the event the significant resources are recovered and the qualified archaeologist determines the resources to be historic or unique, avoidance and/or mitigation would be required pursuant to and consistent with CEQA Guidelines Sections 15064.5 and 15126.4 and Public Resources Code Section 21083.2.

The land owner shall relinquish ownership of all cultural resources, including sacred items, burial goods, and all archaeological artifacts, that are found on the project site to the appropriate tribe for proper treatment and disposition.

*Timing/Implementation:* During all ground-disturbing construction activities

*Enforcement/Monitoring:* City of Rancho Cordova Planning Department

**MM 5.2** If human remains are inadvertently discovered during project construction, the procedures of conduct mandated by Health and Safety Section 7050.5, Public Resources Code Section 5097.98, and by CEQA in CCR Section 15064.5(e) shall be followed. According to these provisions, should human remains be encountered, all work in the immediate vicinity of the burial must cease and any necessary steps to ensure the integrity of the immediate area must be taken. The remains are required to be left in place and free from disturbance until a final decision as to the treatment and their disposition has been made. The Sacramento County coroner would be immediately notified to determine whether the remains are Native American. If the coroner determines the remains are Native American, the coroner has 24 hours to notify the Native American Heritage Commission, which will in turn notify the person identified as the most likely descendant (MLD) of any human remains. Further actions would be determined, in part, by the desires of the MLD, who has 24 hours to make recommendations regarding the disposition of the remains following notification from the Native American Heritage Commission of the discovery. If the MLD does not make recommendations within 24 hours, the owner is required, with appropriate dignity, to reinter the remains in an area of the property secure from further disturbance. Alternatively, if the owner does not accept the MLD’s recommendations, the owner or the descendant may request mediation by the Native American Heritage Commission.

*Timing/Implementation:* During all ground-disturbing construction activities

*Enforcement/Monitoring:* City of Rancho Cordova Planning Department

**ENVIRONMENTAL CHECKLIST**

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>6. GEOLOGY AND SOILS.</b> 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 checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**DISCUSSION OF IMPACTS**

a)

- i. **No Impact.** The project site is not located within an Alquist-Priolo earthquake hazard zone and there are no known active faults within Sacramento County. Therefore, the project site is not considered to be at risk of surface fault rupture and there would be no impact.

- ii. **Less Than Significant Impact.** The Sacramento region is not considered to be seismically active; however, the project site could be subject to minor ground-shaking as a result of earthquakes on distant faults. Minor ground-shaking can result in partial collapse of buildings, and extensive damage in poorly built or substandard structures. The design-controllable aspects of building foundation support, protection from seismic ground motion, and soil or slope instability are governed by existing regulations of the California Building Code (CBC), which was adopted by the City of Rancho Cordova (see Rancho Cordova Municipal Code Chapter 16.02, Uniform Administrative Code). These regulations require that project designs reduce potential adverse soils, geology, and seismicity effects to less than significant levels. All construction on the project site would be required to comply with applicable engineering standards of the CBC. Compliance with the CBC would minimize the risk of loss, injury, and death in the event of seismic ground-shaking. The impact would be less than significant.
  - iii. **Less Than Significant Impact.** Liquefaction is the process in which water is combined with unconsolidated soils as a result of seismic activities involving ground motion and pressure. According to the City of Rancho Cordova General Plan Draft Environmental Impact Report (2006a), the potential for soil liquefaction due to earthquakes and ground-shaking is considered minimal in the city. The groundwater depth in the city is generally greater than 50 feet, rendering the potential for liquefaction low. In addition, the potential for liquefaction is considered low due to the nature of the soils underlying the city, which generally have low to moderate water-holding capacities. The low risk of liquefaction at the site due to these factors would be further reduced by proper design of all proposed structures in conformance with the CBC. Compliance with CBC regulations would ensure that the foundation for the proposed concession/bathroom/storage building is designed and constructed to resist soil movement and that the site drains properly to reduce seasonal fluctuations in soil moisture content. Compliance with these existing regulations would reduce this impact to a less than significant level.
  - iv. **No Impact.** The project site and surrounding area are flat and would not be at risk of landslide due to seismic activity or slope instability. There would be no impact.
- b) **Less Than Significant Impact.** Proposed construction activities would disturb site soils, exposing them to the erosive effects of wind and water. To reduce the potential for wind erosion, fugitive dust would be controlled through compliance with SMAQMD Rule 403 (Fugitive Dust) which requires implementation of all reasonable precautions to control dust. Such precautions may include the use of water or chemicals to control dust during land clearing and construction operations as well as the application of asphalt, oil, water, or suitable chemicals to material stockpiles and other surfaces which can give rise to airborne dust.

To reduce the potential for water erosion, the proposed development would be subject to the requirements set forth in the National Pollutant Discharge Elimination System (NPDES) Storm Water General Construction Permit for construction activities as well as Rancho Cordova Municipal Code Chapter 16.44 (Land Grading and Erosion Control), which require projects to develop and implement an SWPPP that includes BMPs and requires inspections of stormwater control structures and pollution prevention measures. Examples of typical construction BMPs in SWPPPs include using temporary mulching, seeding, or other suitable stabilization measures to protect uncovered soils; storing materials and equipment to ensure that spills or leaks cannot

## ENVIRONMENTAL CHECKLIST

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enter the storm drain system or surface water; developing and implementing a spill prevention and cleanup plan; installing traps, filters, or other devices at drop inlets to prevent contaminants from entering storm drains; and using barriers, such as straw bales or plastic, to minimize the amount of uncontrolled runoff that could enter drainages and surface waters. The discharger must also install structural controls, such as sediment control, as necessary, which would constitute best available technologies to achieve compliance with water quality standards.

Compliance with these existing regulations would minimize soil erosion during project construction. This impact would be less than significant.

- c,d) **Less Than Significant Impact.** See Issue 6(a)(iii-iv) above. The project site is not located in an area that is susceptible to liquefaction or landslides. In accordance with CBC and Municipal Code requirements, the City would require the submittal of a site-specific geotechnical study for the project site as part of the building permit process. The geotechnical study would evaluate site soils and provide recommendations as necessary for site preparation, foundations, and building construction to address issues such as unstable or expansive soils. Therefore, this impact would be less than significant.
- e) **No Impact.** The proposed project would be served by a public sewer system. No septic tanks or other alternative wastewater systems are proposed. There would be no impact.
- f) **Less Than Significant Impact With Mitigation Incorporated.** Project-related construction activities would have the potential to disturb previously undiscovered subsurface paleontological resources (fossilized remains, traces, or imprints) and/or unique geological features. Implementation of mitigation measure **MM 6.1** would reduce this impact to a less than significant impact by requiring work to halt if a resource is encountered and for the resource to be properly managed under the direction of a qualified paleontologist.

### Mitigation Measures

- MM 6.1** If paleontological resources (i.e., fossilized remains, traces, or imprints) are inadvertently discovered during project construction, work shall be halted immediately within 50 feet of the discovery, the City shall be notified, and a professional archaeologist shall be retained to evaluate the discovery. The project applicant shall retain a qualified paleontologist to provide an evaluation of the find and to prescribe techniques to reduce impacts to a less than significant level. In considering any techniques proposed by the consulting paleontologist, the City of Rancho Cordova Planning Department shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, land use assumptions, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while mitigation for paleontological resources is carried out.

*Timing/Implementation:* During all ground-disturbing construction activities

*Enforcement/Monitoring:* City of Rancho Cordova Planning Department



## ENVIRONMENTAL CHECKLIST

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>7. GREENHOUSE GAS EMISSIONS.</b> 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"/>
b) Conflict with an 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"/>

### DISCUSSION OF IMPACTS

a,b) **Less Than Significant Impact.** Addressing GHG generation impacts requires an agency to make a determination as to what constitutes a significant impact. The amendments to the CEQA Guidelines specifically allow lead agencies to determine thresholds of significance that illustrate the extent of an impact and are a basis from which to apply mitigation measures. This means that each agency is left to determine whether a project's GHG emissions will have a "significant" impact on the environment. The guidelines direct that agencies are to use "careful judgment" and "make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" the project's GHG emissions (14 California Code of Regulations Section 15064.4(a)).

The assessment of GHG emissions in this analysis is based on guidance from the SMAQMD. The SMAQMD has developed "bright-line" GHG thresholds in order to provide a uniform scale to measure the significance of land use development projects in its jurisdiction.

- For the evaluation of construction-related emissions, the SMAQMD recommends using the mass emission threshold of 1,100 metric tons of CO<sub>2</sub>e per year.
- For the evaluation of operational emissions, the SMAQMD recommends a two-tier approach:
  - Tier I. Operational emissions of a project would not have a significant impact on the environment if they are less than 1,100 metric tons of CO<sub>2</sub>e per year.
  - Tier II. Projects with operational emissions that exceed 1,100 metric tons of CO<sub>2</sub>e per year, but are able to demonstrate a 21.7 percent reduction from a "No Action Taken" scenario compared to the proposed project operating in 2020 would not conflict with CARB's Scoping Plan.

The proposed project is compared to the construction-level significance threshold of 1,100 metric tons of carbon dioxide equivalent (CO<sub>2</sub>e) per year and the operational-level significance Tier I threshold of 1,100 metric tons of CO<sub>2</sub>e per year. Compliance with these thresholds, which are intended to evaluate project consistency with the GHG targets established in AB 32, will be part of the solution to the cumulative GHG emissions

problem, rather than hinder the state’s ability to meet its goals of reduced statewide GHG emissions under AB 32. If estimated emissions fall below these thresholds, it will be considered less than significant in terms of contribution to GHG emissions. If estimated emissions surpass these thresholds, the proposed project will be considered significant.

GHG emissions of the proposed project were calculated using CalEEMod, a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential GHG emissions associated with construction and operations from a variety of land use projects. Project-generated increases in GHG emissions would be predominantly associated with motor vehicle use.

**Project GHG Emissions**

The project’s GHG emissions would be generated over the short term from construction activities, consisting primarily of emissions from equipment exhaust. There would also be long-term regional emissions associated with new vehicular trips and indirect source emissions, such as electricity usage for lighting.

Construction GHG Emissions

**Table 5** shows the estimate of annual GHG emissions generated by construction activities.

**TABLE 5  
CONSTRUCTION-RELATED GREENHOUSE GAS EMISSIONS (METRIC TONS PER YEAR)**

<b>Construction Activities</b>	<b>Metric Tons of CO<sub>2</sub>e</b>
Kilgore Soccer Field	274
SMAQMD Potentially Significant Impact Threshold	1,100
<b>Exceed SMAQMD Threshold?</b>	<b>No</b>

*Source: CalEEMod version 2016.3.1. Refer to **Appendix G** for model data outputs.*

*Notes: Construction activities are anticipated to last two months. Emission projections account for the construction equipment summary shown in Table 2.*

As shown, construction would generate approximately 274 metric tons of CO<sub>2</sub>e. Therefore, emissions would not exceed SMAQMD significance thresholds for construction-generated GHG emissions.

**Operational GHG Emissions**

The project’s long-term operational emissions are summarized in **Table 6**.

**TABLE 6  
OPERATIONAL-RELATED GREENHOUSE GAS EMISSIONS (METRIC TONS PER YEAR)**

Emissions Source	CO <sub>2</sub> e
Area Source (landscaping, hearth)	0
Energy	59
Mobile	941
Solid Waste Hauling & Decomposition	Negligible
Water & Wastewater Conveyance	1
<b>Total</b>	<b>1,001</b>
SMAQMD Potentially Significant Impact Threshold	1,100
<b>Exceed SMAQMD Threshold?</b>	<b>No</b>

Source: CalEEMod version 2016.3.1. See **Appendix G** for emission model outputs.

As shown, operation of the project would generate approximately 1,001 metric tons of CO<sub>2</sub>e annually. Therefore, emissions would not exceed SMAQMD significance thresholds for operational GHG emissions in the year 2020.

The project would contribute GHG emissions during construction and operation at levels that are below SMAQMD significance thresholds. These thresholds are intended to evaluate a project for consistency with GHG targets established in AB 32. Compliance with SMAQMD thresholds will be part of the solution to the cumulative GHG emissions, rather than hinder the state’s ability to meet its goals of reduced statewide GHG emissions under AB 32.

**Project GHG Emissions Consistency with the Metropolitan Transportation Plan/Sustainable Communities Strategy 2035 (MTP/SCS)**

The Sacramento Area Council of Governments’ (SACOG) MTP/SCS establishes GHG emissions goals for automobiles and light-duty trucks. As shown in **Table 6**, GHG emissions resulting from development-related transportation sources is the most potent source of emissions, and therefore project comparison to the MTP/SCS is an appropriate indicator of whether the proposed project is consistent with the MTP/SCS. Since the project site is an “Established Community” in the MTP/SCS planning period as opposed to “Land Not Identified for Development in the MTP/SCS or Blueprint,” and is surrounded by lands identified as “Developing Community,” it is included in an area where urban development is predicted by SACOG. Therefore, the development of soccer fields to serve such an area is therefore consistent with the MTP/SCS and it can be assumed that regional mobile emissions will decrease in line with the goals of the MTP/SCS with implementation of the proposed project. While the project would generate GHG emissions, implementing SACOG’s MTP/SCS will greatly reduce the regional GHG emissions from transportation, and the proposed project will not obstruct the achievement of the MTP/SCS emission reduction targets. This impact is less than significant.

**ENVIRONMENTAL CHECKLIST**

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>8. HAZARDS AND HAZARDOUS MATERIALS.</b> 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"/>
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"/>
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"/>
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 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, within 2 miles of a public airport or a 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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"/>
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**DISCUSSION OF IMPACTS**

a-c) **Less Than Significant Impact.** Project construction activities would involve the use of various hazardous materials such as oil, solvents, gasoline, diesel fuel, asphalt, and paint. Once operational, the project would require the use of common hazardous materials for landscaping and facility maintenance such as fertilizers, pesticides, cleaning products, and paint. These materials would be used periodically and in small quantities.

Furthermore, construction workers and maintenance staff would be required by law to use and store these materials in accordance with the product labeling. Sacramento County provides hazardous waste collection centers to ensure proper disposal of such materials. The project proposes to use artificial turf with an alternative infill<sup>3</sup> product made from zeolite, a natural mineral, which is nontoxic. Therefore, it is assumed that the presence of these materials on the project site would not create hazardous conditions or a risk of upset at the site or the surrounding area, including the school facilities identified within one-quarter mile of the site. This impact would be less than significant.

- d) **Less Than Significant Impact with Mitigation Incorporated.** As described previously, a portion of the project site (APN 072-0260-031) was formerly part of a larger site used to operate an oil reprocessing facility between the mid-1950s and approximately 1968. These operations included use of two unlined holding ponds used to store and treat wastewater and oils for resale. As a result of these operations, elevated concentrations of hazardous substances were detected in the soil and groundwater and the property was added to the California State list of hazardous substance release sites selected for response action on January 1, 1985.

The soil and groundwater at the property were remediated per the final Remedial Action Plan prepared for the project; the case was certified as completed on June 30, 2014; and the previous LUCs recorded for the site were terminated. Remediation included excavation and disposal of shallow soil in the area of the former ponds, installation of an asphalt cap to reduce rainwater infiltration and eliminate exposure, and monitored natural attenuation of groundwater. However, soils were not remediated to levels protective for unrestricted land use, so a new LUC reflecting completion of remediation was recorded for the parcel on June 10, 2014 (see **Appendix A**) to establish requirements and restrictions to minimize inappropriate exposure and prevent inappropriate land use. Prohibited uses of the site include any type of residence, hospital, public or private school for children, or day care center for children. As a recreational facility, the project would comply with these land use restrictions. In a letter dated March 24, 2015 (see **Appendix A**), the DTSC confirmed that the proposed land use is not inconsistent with the site's LUC.

Ground disturbance by construction workers could expose contaminated soils on the project site. Presence of the asphalt cap would minimize the potential for exposure by prohibiting any soil disturbance at the location of the former holding ponds. Implementation of the Soil Management and Disposal Plan (SMDP) prepared for the proposed project and approved by the DTSC (see **Appendix F**) would be a condition of approval for the project and would further reduce potential risks of exposure by providing guidance for managing disturbed soil whenever Constituents of Concern (COCs) are discovered during construction. The SMDP describes information that would be used by on-site personnel to recognize visual evidence or chemical odors that may indicate the presence of COCs in soils. The COCs for this project include: volatile organic carbons (VOCs), total petroleum hydrocarbons as motor oil (TPHmo), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), perchlorate, and total lead. The SMDP also describes procedures that would be followed during the stockpiling, storage, sampling, laboratory testing, and subsequent handling of soil disturbed by construction activities.

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<sup>3</sup> Infill is the product spread between the artificial turf fibers.

## ENVIRONMENTAL CHECKLIST

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If not properly managed, construction and operation of the site could create a significant hazard to the public or the environment. Therefore, this impact would be potentially significant. However, implementation of mitigation measure **MM 8.1** would ensure that construction and operation of the proposed project would comply with the requirements and restrictions of the LUC for the property. Implementation of mitigation measure **MM 8.2** would ensure that the guidance provided in the SMDP would be followed throughout project construction activities. In addition, in comments on the previous MND circulated for the project, DTSC recommended mitigation measures **MM 8.3** and **8.4** to further ensure the integrity of the asphalt cap. Implementation of these mitigation measures would protect worker safety and ensure that the project does not create a significant hazard to the public or the environment. Therefore, this impact would be less than significant with mitigation incorporated.

- e,f) **Less Than Significant Impact.** The nearest airport to the project site is Mather Airport, approximately 1.7 miles southwest of the site. While the project site is within 2 miles of this airport, it is located outside of its land use plan area. Therefore, the project would not create a safety hazard for visitors of the site and this impact would be less than significant.
- g) **Less Than Significant Impact.** The proposed project would not result in any changes to the roadway system and would not otherwise block access to any major roadways or facilities critical to emergency response or evacuation. Should any temporary lane closures or detours be necessary during project construction, the contractor would be required to coordinate with the City to ensure adequate access is maintained for emergency responders. Therefore, this impact would be less than significant.
- h) **Less Than Significant Impact.** The project site is located in urbanized area that is served by a public fire protection service (Metro Fire) and is not subject to risk of wildland fire. This impact would be less than significant.

### Mitigation Measures

**MM 8.1** The project applicant shall comply with all relevant requirements and restrictions of the *Covenant to Restrict Use of Property, Environmental Restriction, Sacramento County Assessor's Parcel No.: 072-0260-006 Owner: White Rock & Kilgore, LLC (Former Brighton Oil Facility)* recorded by the Sacramento County Recorder's office on June 10, 2014.

*Timing/Implementation: During site preparation and construction*

*Enforcement/Monitoring: City of Rancho Cordova Planning Department*

**MM 8.2** The project contractor shall follow the guidance and implement the procedures outlined in the Soil Management and Disposal Plan prepared for the proposed project by Wallace Kuhl and Associates dated October 8, 2015, and provided as **Appendix F** to this document throughout all construction activities.

*Timing/Implementation: During site preparation and construction*

*Enforcement/Monitoring: City of Rancho Cordova Planning Department*

**MM 8.3** Throughout all site preparation and construction activities, the cap boundaries shall be identified. In the case of an incidental disturbance of the cap, DTSC shall be contacted immediately to discuss the potential remedies.

*Timing/Implementation:* During site preparation and construction

Enforcement/Monitoring: City of Rancho Cordova Planning Department

**MM 8.4** A report of all construction activities that may have impacted the integrity of the cap shall be submitted to DTSC within 90 days of the completion of the work. The report shall contain the following:

- o Detailed description of the work completed with a narrative description supported by engineering drawings;
- o Health and Safety measures taken to minimize the exposure of constituents of concerns to the public;
- o Photo record of the work completed; and
- o Certification by the Superintendent or Project Manager that the work completed conformed to the Soil Management and Disposal Plan.

*Timing/Implementation:* Within 90 days of the completion of construction

Enforcement/Monitoring: City of Rancho Cordova Planning Department

**ENVIRONMENTAL CHECKLIST**

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>9. HYDROLOGY AND WATER QUALITY.</b> 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"/>
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"/>
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 which would result in substantial erosion or siltation on- or off-site?	<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 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"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of a failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



**DISCUSSION OF IMPACTS**

a,f) **Less Than Significant Impact.** The proposed project could result in water quality degradation during construction and operation. Site preparation and construction activities associated with development of project would include land clearing, excavation, and grading, which would disturb and expose soils to water erosion, potentially increasing the amount of silt and debris entering the drainage system and downstream waterways. In addition, refueling and parking of construction equipment and other vehicles on-site during construction could result in oil, grease, and other related pollutant leaks and spills that could enter runoff. However, as noted in Issue 6(b), the project would be required to obtain coverage under the state's General Construction NPDES permit and comply with Rancho Cordova Municipal Code Chapter 16.44 (Land Grading and Erosion Control), which require projects to develop and implement a SWPPP that includes BMPs and requires inspections of stormwater control structures and pollution prevention measures. Compliance with these requirements would ensure that site development activities do not result in the movement of unwanted material into waters on or off the project site.

Operation of the proposed project could generate runoff from the proposed parking lot that contains oil, grease, fuel, antifreeze, and byproducts of combustion (such as lead, cadmium, nickel, and other metals), as well as nutrients, sediments, and other pollutants. The project would be subject to City of Rancho Cordova Municipal Code Chapter 15.12, Storm Water Management and Discharge Control, which would require implementation of BMPs to control discharges during project operation. Implementation of these existing regulations would ensure this impact would be less than significant.

b) **Less Than Significant Impact.** The proposed project would be provided domestic water service by the Golden State Water Company (GSWC), which derives its water supplies from a combination of surface water diverted from the American River and groundwater pumped from the South American Subbasin of the Sacramento Valley Groundwater Basin (GSWC 2016). According to the GSWC's 2015 Urban Water Management Plan, the basin is not adjudicated and is not in a general state of overdraft. Local depressions have occurred in some areas; however, no GSWC wells are present in these areas. The Central Sacramento County Groundwater Forum, a voluntary groundwater management effort, was formed in 2002 to ensure a reliable and safe water supply for stakeholders in the basin through 2030. As part of this effort, a peak reliable groundwater extraction capacity was established for the basin and the Central Sacramento County Groundwater Management Plan was developed. Assuming these current efforts to manage the basin continue, the state Department of Water Resources has not projected that the basin will become overdrafted in the future.

The proposed project would have an estimated water demand of 2 acre-feet per year (AFY), which would represent a 0.01 percent increase compared to GSWC's total projected water demand for 2020 (17,342 AFY) (GSWC 2016). This would not represent a substantial increase in water demand and would not result in a substantial depletion of groundwater supplies. Furthermore, as a soccer field complex that contains turf areas which would allow for stormwater to continue infiltrating the ground, the project would not substantially interfere with groundwater recharge. This impact would be less than significant.

c-e) **Less Than Significant Impact.** The proposed project would be developed as a soccer field complex that would consist primarily of artificial turf areas, which would allow stormwater to continue to infiltrate into the ground. The project would be served by the City's public drainage system and would not substantially alter drainage patterns or runoff rates or

## ENVIRONMENTAL CHECKLIST

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volumes. Therefore, the project would not result in on- or off-site flooding and would not exceed the capacity of the serving drainage system. Furthermore, as described previously, soil erosion would be controlled through implementation of BMPs to minimize erosion and siltation during construction. Therefore, this impact would be less than significant.

- g,h) **No Impact.** The project site is not located within a flood hazard area (FEMA 2012) and does not involve the construction of any residential uses. There would be no impact.
- i) **Less Than Significant Impact.** According to the City of Rancho Cordova's General Plan Draft EIR (2006a), the northern portion of the city is located within the 500-year floodplain predictions by FEMA and the US Army Corps of Engineers or as a result of complete failure of Folsom Dam. Failure of either the Cordova Meadows levee or the Sunriver levee along the American River could potentially result in the inundation of properties in the northern portion of the city. However, such an event has an extremely low probability of occurring and is not considered to be a reasonably foreseeable event. Furthermore, the proposed project does not include any critical facilities or residential uses which would be at heightened risk in the event of flooding. Therefore, this impact would be less than significant.
- j) **No Impact.** The project site is not located within a tsunami evacuation area and is not located in the vicinity of any large enclosed bodies of water capable of producing seiche waves. Furthermore, the project site is not located near any hillsides and is not at risk of inundation from mudslide. There would be no impact.

## ENVIRONMENTAL CHECKLIST

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>10. LAND USE AND PLANNING.</b> Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### DISCUSSION OF IMPACTS

- a) **No Impact.** The project site is located on an infill parcel in an urbanized area of the city. The project would construct soccer fields, one small building, and associated parking facilities. The project does not include any changes to the roadway system, the existing bicycle lanes, or sidewalks adjacent to the site. Therefore, these improvements would not affect vehicular, transit, bicycle, or pedestrian access in the area. There would be no impact.
- b) **Less Than Significant Impact.** The project site is currently designated by the City of Rancho Cordova General Plan as Office Mixed Use (OMU) and by the City's Zoning Code as Office Professional Mixed Use (OPMU). The OMU land use designation encourages the integration of commercial and/or residential use in conjunction with office use; however, it also allows for public/quasi-public uses (City of Rancho Cordova 2006b). In addition, Outdoor Commercial Recreation is a use that is permitted by right within the OPMU zone (City of Rancho Cordova 2017). Since the proposed project would permit public use of the soccer fields and be consistent with all restrictions resulting from historical hazardous materials contamination, the proposed project would be consistent with the existing land use designations for the site.

As described previously, the project site is also subject to a LUC between the property owner and the DTSC. The LUC prohibits development of the site for any type of residence, hospital, public or private school for children, or day care center for children. As a recreational facility, the proposed project would comply with the restrictions of the LUC. In a letter dated March 24, 2015, the DTSC concurred that the project would not be inconsistent with the LUC. Therefore, this impact would be less than significant.

- c) **No Impact.** There are no adopted habitat conservation plans or natural community conservation plans applicable to the project site. There would be no impact.

**ENVIRONMENTAL CHECKLIST**

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>11. MINERAL RESOURCES.</b> 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 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"/>

**DISCUSSION OF IMPACTS**

a) **Less Than Significant Impact.** The Surface Mining and Reclamation Act (Public Resources Code Section 2710 et seq.) directs the state geologist to identify and map the nonfuel mineral resources of the state in order to show where economically significant mineral deposits occur and where they are likely to occur based upon the best available scientific data. As such, the California Geological Survey and the State Mining and Geology Board are the state agencies responsible for the classification and designation of areas containing, or potentially containing, significant mineral resources. Areas known as Mineral Resource Zones (MRZs) are classified on the basis of geologic factors, without regard to existing land use and land ownership. The primary objective of the process is to provide local agencies with information on the location, need, and importance of minerals within their respective jurisdictions. The areas are categorized into four general classifications (MRZ-1 through MRZ-4) and are defined as follows:

- MRZ-1 Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- MRZ-2 Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists.
- MRZ-3 Areas containing mineral deposits, the significance of which cannot be evaluated from available data.
- MRZ-4 Areas where available data is inadequate for assignment to any other MRZ.

Approximately 6,076 acres in the city, including the project site, are classified as MRZ-2 and may contain aggregate deposits (City of Rancho Cordova 2006a). However, the project site is an infill parcel surrounded by urban development and encompasses fewer than 11 acres, making the use of the site for mineral extraction infeasible. Furthermore, the site has been designated by the City for urban development, indicating that the City does not consider it to be a significant resource of value to the region. This impact would be less than significant.

b) **No Impact.** There are two existing mining operations in the city and several others just outside the city limits, some of which may expand in the future. These operations consist primarily of fine sand and coarse gravel construction aggregates, as well as clay (City of Rancho Cordova 2006a). None of these operations are located within the vicinity of the project site and project implementation would not interfere with their operations. There would be no impact.

## ENVIRONMENTAL CHECKLIST

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>12. NOISE.</b> Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) 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"/>
c) 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"/>
d) 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"/>
e) For a project located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or a public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### DISCUSSION OF IMPACTS

The following analysis is based on the environmental noise assessment prepared for the proposed project by Bollard Acoustical Consultants (BAC) on December 10, 2015 (see **Appendix H**). Under the revised project, the proposed facility would be located approximately 350 feet farther north (and away from the nearest residence to the south) than the originally proposed project. Thus, the environmental noise assessment provides a more conservative analysis of the revised project's noise impacts. a,c) **Less Than Significant Impact**. The existing noise environment within the overall project area is defined primarily by traffic noise sources, although intermittent aircraft overflights and other sources also affect the local noise environment. Long-term (continuous) ambient noise level measurements conducted on the project site indicate that the existing ambient noise levels in the project vicinity were 56 dB Leq during daytime hours and 51 dB Leq during nighttime hours.

#### Off-Site Traffic Noise

To assess off-site traffic noise impacts due to the project, peak hour traffic noise levels resulting from the project were computed using the FHWA model, and those levels were

compared against measured existing ambient noise levels. The peak hour traffic noise generation was computed to be 56 dB  $L_{eq}$  or less at the nearest receptors based on the assumption that the parking lot would fill or empty during a busy hour of playing field usage. Because predicted peak hour project traffic noise generation would be at or below existing traffic noise levels at the nearest sensitive receptors, off-site traffic noise impacts resulting from project-generated traffic would be less than significant.

### **Playing Field Noise**

To predict future noise exposure at the nearest residential land uses, located over 1,000 feet to the south of the project site, as well as within interior spaces of nearest commercial buildings, BAC file data for similar playing fields and outdoor activities were used. Those data were projected from the effective noise center of the various soccer fields to the nearby receptors using accepted sound propagation algorithms (6 dB decrease per doubling of distance from the noise source). The results of the outdoor playing field noise assessment (provided in Table 4 of **Appendix H**) indicate that average playing field noise levels would range from 18 to 25 dB  $L_{eq}$  within the nearest commercial/professional buildings to the project site. As noted above, the ambient noise levels in the project vicinity are 56 dB  $L_{eq}$  during daytime hours and 51 dB  $L_{eq}$  during nighttime hours. Caltrans provides guidance for combining noise levels (Caltrans 2013) and recommends that when combining noise levels that differ by 10 dB or more, there is no change from the higher noise level. Therefore, combining the noise from the project site to the ambient, there would be no change in the 56 dB  $L_{eq}$  daytime and 51 dB  $L_{eq}$  nighttime levels. Thus, there would be no change from the existing levels at the nearest commercial/professional buildings. The results indicate that average and maximum playing field noise levels would be approximately 38 dB  $L_{eq}$  and 48 dB  $L_{max}$ , respectively, at the nearest residences to the south. Based upon the Caltrans methodology, given that the difference between the project-generated noise (38 dB  $L_{eq}$ ) and the ambient noise levels (56 dB  $L_{eq}$  daytime and 51 dB  $L_{eq}$  nighttime) exceeds 10 dB, there would be no change to noise levels at the nearest residences. Because predicted playing field noise levels would be well within compliance with both interior and exterior noise level standards at the nearest receptors to the project site, this impact would be less than significant.

### **On-Site Circulation and Parking Lot Noise**

To predict future noise exposure from on-site circulation and parking lot activities at the nearest noise-sensitive receivers, BAC file data collected at parking lots were used. Those data were projected from the effective noise center of the parking lot to the nearby noise-sensitive land uses and buildings using accepted sound propagation algorithms (6 dB decrease per doubling of distance from the noise source). The results of the assessment indicate that average parking lot noise levels would range from 6 to 13 dB  $L_{eq}$  within the nearest commercial/professional buildings to the project site. These levels are well below the 45 dB  $L_{eq}$  interior standard. The results also indicate that average and maximum parking lot noise levels would be approximately 26 dB  $L_{eq}$  and 32 dB  $L_{max}$ , respectively, at the nearest residences to the south. These levels are well below the 50 dB  $L_{eq}$  and 70 dB  $L_{max}$  exterior standard of significance and project-generated noise would not increase noise levels at these locations due to the project noise levels being more than 10 dB less than ambient conditions. Because predicted parking lot noise levels would be well within compliance with both interior and exterior noise level standards at the nearest receptors to the project site, this impact would be less than significant.

**Traffic Noise Impacts upon Proposed Soccer Fields**

The Rancho Cordova General Plan Noise Element requires that future traffic noise levels in new playgrounds and neighborhood parks not exceed 70 dB L<sub>dn</sub> at outdoor activity areas. To evaluate traffic noise exposure at the proposed soccer fields, the long-term ambient noise level data collected at the site were utilized. The results of the ambient monitoring at the site indicate a measured noise level of 59 L<sub>dn</sub>. The Rancho Cordova General Plan EIR predicts a noise level of 69 L<sub>dn</sub> on White Rock Road between Zinfandel Drive and Sunrise Boulevard at 100 feet from the roadway centerline. The project site is more than 100 feet from White Rock Road. Because this level is below the 70 dB L<sub>dn</sub> noise standard applied by the City to parks and playing fields affected by transportation noise sources, this impact would be less than significant.

- b) **Less Than Significant Impact.** Groundborne vibration and noise can result from both construction and grading activities. The use of unusual grading equipment or blasting that would result in the creation of excessive groundborne vibrations would not be required for the proposed project. While some localized vibrations may occur during proposed grading and excavation work, such vibrations are expected to be minor and would not affect the closest sensitive receptors, which are the residences located over 1,000 feet to the south. Once construction of the project is complete, no ground vibrations or noises would be expected to occur. This impact would be less than significant.
- d) **Less Than Significant Impact.** During the construction phases of the proposed project, noise from on-site construction activities, including construction, grading, and parking lot paving, would add to the noise environment in the project vicinity. Activities involved in construction would typically generate maximum noise levels ranging from 85 to 90 dB at a distance of 50 feet. Noise would also be generated during the construction phase by increased truck traffic on area roadways.

Project construction activities would occur between the hours of 6 a.m. and 8 p.m. during weekdays, and between the hours of 7 a.m. and 8 p.m. on weekends, in order to be considered exempt from the provisions of the Rancho Cordova Noise Ordinance (Municipal Code Section 6.68.090(E)). The nearest residential uses are over 1,000 feet south of the project site. Limiting the hours of construction noise to these hours would avoid generating noise during the most sensitive night and early morning hours, thus minimizing potential disturbance of sensitive receptors in the vicinity. Therefore, this impact would be less than significant.

- e,f) **Less Than Significant Impacts.** According to the City of Rancho Cordova General Plan Draft EIR (2006), the project site is located outside of the 65 dB CNEL noise contour for the Mather Airport and would not be exposed to excessive noise levels generated by airport operations. These impacts would be less than significant.

**ENVIRONMENTAL CHECKLIST**

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>13. POPULATION AND HOUSING.</b> Would the project:				
a) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**DISCUSSION OF IMPACTS**

- a) **Less than Significant Impact.** As of January 2015, the City of Rancho Cordova had an estimated total population of 69,112 (DOF 2015). As a recreational use, the proposed project would neither directly nor indirectly induce substantial population growth. The project does not include any residential uses, would not create a substantial number of new jobs, and would not extend any roads or other infrastructure to areas not planned for future development. This impact would be less than significant.
- b,c) **No Impact.** The proposed project does not involve the demolition of any housing and would not otherwise displace any housing or people. There would be no impact.



**ENVIRONMENTAL CHECKLIST**

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>14. PUBLIC SERVICES.</b> Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
a) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**DISCUSSION OF IMPACTS**

a,b) **Less Than Significant Impacts.** The project site is served by Metro Fire and the City of Rancho Cordova Police Department (RCPD).

The RCPD was formed when the City of Rancho Cordova incorporated in 2003 through a contract with the Sacramento Sheriff’s Department. The RCPD consists of 55 sworn and 7 nonsworn staff, who work solely in the city. The RCPD operates out of its station at 2897 Kilgore Road, less than 1 mile north of the project site. The RCPD has established a goal of providing one officer per every 1,000 citizens and one support staff member for every three officers (RCPD 2016).

Metro Fire serves a population of over 727,000 in a 417-square-mile service area from 42 fire stations staffed by 155 on-duty personnel on any given day. Metro Fire is a combination of 16 smaller fire departments that, over the years, merged to create Metro Fire as a California Special District. The project site would most likely be served by Metro Fire Station 66 located at 3180 Kilgore Road just southwest of the project site (Metro Fire 2016a, 2016b).

Operation of a soccer field complex on the project site would not be expected to generate a substantial number of new calls for service from either the RCPD or Metro Fire. The project would not increase the City’s population and thus, would not require additional personnel to maintain the service standards of either RCPD or Metro Fire. Furthermore, the project site is located less than 1 mile from both the RCPD station and Metro Fire Station 66 and would not trigger the need for new or expanded facilities. Any resulting increase in demand for service was accounted for in the City of Rancho Cordova General Plan Draft EIR as part of buildout the City in accordance with the General Plan. These impacts would be less than significant.

c) **No Impact.** The proposed project involves construction and operation of a recreational facility that, once operational, would create two part-time positions which could be filled by local workers. Thus, the project would not be expected to generate any new school enrollments and there would be no impact to schools. Regardless, as a commercial use,

## ENVIRONMENTAL CHECKLIST

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the proposed project would be required to pay impact fees to offset the impact of new development on the school system. There would be no impact on schools.

- d) **Less Than Significant Impact.** The proposed project is a recreational use. The effects of constructing and operating the proposed facility are the subject of this initial study. The potential environmental effects of the project are discussed in the appropriate subsections of this document and, where necessary, mitigation is provided to reduce impacts to levels that are less than significant. The proposed project would not generate additional demand for parks or recreational facilities such that there would be additional effects beyond those disclosed in this document. This impact would be less than significant.
- e) **No Impact.** The proposed project would create a new recreational facility in the city but would not increase the city's resident population. Thus, the project would not be expected to increase demand for any other public services or require the expansion of any public facilities. There would be no impact on other public services.

## ENVIRONMENTAL CHECKLIST

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>15. RECREATION.</b>				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Does the project include recreational facilities, or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### DISCUSSION OF IMPACTS

- a,b) **Less Than Significant Impacts.** The proposed project would provide a new recreational facility to serve city residents. Thus, it would not increase the use of or contribute to the physical deterioration of other existing parks or recreational facilities. As discussed in Issue 14(d), the potential environmental effects of the project are discussed in the appropriate subsections of this document and, where necessary, mitigation is provided to reduce impacts to levels that are less than significant. Therefore, these impacts would be less than significant.

**ENVIRONMENTAL CHECKLIST**

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>16. TRANSPORTATION/TRAFFIC.</b> 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"/>
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"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<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 (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>

**DISCUSSION OF IMPACTS**

Based on a Trip Generation Assessment prepared by KD Anderson & Associates, Inc. (2016a; see **Appendix I**), the City of Rancho Cordova Public Works Department determined that the proposed project would not generate sufficient vehicle trips to warrant preparation of a traffic study. Thus, the following analysis is based on traffic operation data provided in the Rancho Cordova General Plan and a limited intersection level of service analysis prepared by KD Anderson & Associates, Inc. (2016b; see **Appendix I**). The revised project is identical to the originally proposed project in terms of expected attendance and hours of operation and there is no change to anticipated vehicle trip generation or distribution.

a,b) **Less Than Significant Impacts.** The project site is accessed via Kilgore Road which is accessed via White Rock Road on the north and International Drive on the south. According to the Rancho Cordova General Plan Draft EIR (2006), under existing conditions,

the segment of White Rock Road between Zinfandel Drive and Sunrise Boulevard and the segment of International Drive between Zinfandel Drive and Kilgore Road both operate at a level of service (LOS) A, indicating free-flowing traffic with no delays. With buildout of the Rancho Cordova General Plan, operation of this segment of White Rock Road would degrade to LOS C while operation of this segment of International Drive would degrade to LOS D. The City has established a standard for roadway operations of LOS D or better (Rancho Cordova General Plan Policy C.1.2). Thus, with full buildout of the city, including development of the project site, both roadway segments would continue to operate at acceptable levels of service.

KD Anderson & Associates (2016b) analyzed traffic operations at two intersections that would be affected by project traffic: (1) Kilgore Road/White Rock Road and (2) Kilgore Road/International Drive. The calculated operating levels of service at the study intersections are shown in **Table 7**. KD Anderson & Associates (2016c) calculated the project's anticipated trip generation based on input from the project applicant on practice and tournament schedules, number of coaches, players and spectators at each event, and average number of vehicle occupants. The greatest amount of travel (peak hour) on weekdays would occur from 5:15 p.m. to 6:15 p.m. while the Saturday peak hour would be from 2:15 p.m. to 3:15 p.m.

- Weekday PM Peak Hour Trip Generation Forecast. The average automobile occupancy rate identified from club data was 1.23 persons per vehicle. Applying this rate to the travel forecast indicated that under the "worst case" scenario, a total of 73 vehicles would be traveling to the project and 69 vehicles would be leaving during the period from 5:15 p.m. to 6:15 p.m.
- Saturday Peak Hour Trip Generation Forecast. The extent of project trip generation on Saturdays with multiple teams participating can be estimated similarly. In any hour, two teams could be arriving to play on each field and two teams could be leaving after a match. Thus, at the average occupancy rate (1.23 per vehicle) with a "worst case" maximum of 15 persons and a coach on a team plus two cars with "fans," the fields would each generate 30 inbound and 30 outbound trips. A "worst case" scenario of 20 persons, a coach and fans on one field would generate 38 inbound and 38 outbound trips per hour. If all four fields were used, then there would be 128 inbound vehicles and 128 outbound vehicles during each cycle of play, or 256 total trips in that hour.

The LOS impacts associated with the proposed project were identified by superimposing project traffic onto the background condition and recalculating the LOS at each location. While the project may generate more traffic in terms of vehicles per hour on a Saturday, because background traffic volumes are much lower on Saturday, the resulting Existing plus Project totals would remain greater during the weekday evening period.

**Table 7** compares existing LOS at each intersection with conditions occurring if the proposed project were operating under the "worst case" assumptions discussed previously. As indicated, because each intersection has multiple lanes and relatively high capacity, the addition of project trips would have a minor effect on the length of delays, and the overall LOS will not change. The City's minimum LOS D standard would continue to be satisfied. Thus, this impact would be less than significant.

**TABLE 7  
EXISTING AND EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE**

Intersection	Control	Weekday 5:15 to 6:15 p.m.				Saturday 2:15 to 3:15 p.m.			
		Existing		Existing Plus Project		Existing		Existing Plus Project	
		Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
Kilgore Road/White Rock Road	Signal	19.4	B	20.8	B	13.5	B	15.0	B
Kilgore Road/International Drive	Signal	17.0	B	17.3	B	15.9	B	16.4	B

Source: KD Anderson and Associates 2016a

- c) **No Impact.** The proposed project would not increase the population of the city and would not increase air traffic levels. There are no characteristics of the project that would result in an increase in traffic levels or a change in location of air traffic that would result in substantial safety risks. There would be no impact.
- d) **Less Than Significant Impact.** The proposed site plan does not include any unusual design features and is consistent with City standards. The proposed use would be compatible with the surrounding office development. Therefore, the project would not increase hazards for motorists or pedestrian. This impact would be less than significant.
- e) **Less Than Significant Impact.** Two access points to the site are proposed along Kilgore Road. Internal circulation would be provided by a looped driveway through the proposed parking areas. The proposed site plan is consistent with City standards and would provide adequate emergency access. This impact would be less than significant.
- f) **Less Than Significant Impact.** The proposed project would not affect the existing sidewalks, bicycle lanes, or transit routes along Kilgore Road or White Rock Road. On-site, the project would include bicycle racks near the concessions and restroom building and pedestrian pathways. The project would not conflict with any adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities. This impact would be less than significant.

**ENVIRONMENTAL CHECKLIST**

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>17. UTILITIES AND SERVICE SYSTEMS.</b> 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"/>
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"/>
c) Require or result in the construction of new stormwater 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"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate 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"/>
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"/>
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"/>

**DISCUSSION OF IMPACTS**

a,b,e) **Less Than Significant Impacts.** Wastewater generated on the project site would be conveyed via sewer lines operated and maintained by the Sacramento Area Sewer District into the Regional San interceptor system, where it would be conveyed to the Sacramento Regional Wastewater Treatment Plant near Elk Grove.

The proposed concessions/restroom building would be equipped with low-flow water fixtures and would be used intermittently as games are held at the complex. Thus, the project would result in a negligible increase in wastewater generated in the city and the existing conveyance and treatment facilities serving the city would have sufficient capacity to serve the project. Therefore, the project would not require the construction or expansion of wastewater treatment facilities and would not exceed applicable wastewater treatment requirements of the Central Valley Regional Water Quality Control Board.



The project would require construction of on-site sewer lines and connection to existing sewer lines in Kilgore Road. The potential environmental effects of constructing these improvements are considered part of the project and evaluated throughout this initial study. Where necessary, mitigation measures are provided to reduce potential impacts to less than significant levels. Potential environmental effects include disturbance of biological and/or cultural resources, soil erosion, release of hazardous materials and/or air emissions associated with construction equipment, and temporary noise and traffic impacts. These impacts would be less than significant.

- b,d) **Less Than Significant Impacts.** See Issue 9(b). The proposed project would receive domestic water service from the GSWC, which obtains its water from a combination of surface water diverted from the American River and groundwater pumped from the South American Subbasin. According to the GSWC's 2015 Urban Water Management Plan (2016), the GSWC would have a "reasonably available volume" of 19,752 AF in 2040 which would meet anticipated demand (17,752 AF). This projection does not include reductions in demand resulting from implementation of the conservation measures contained in the Urban Water Management Plan or the water use reduction targets required by SBX7-7 (The Water Conservation Act of 2009). Thus, it is anticipated that the projected supply would actually exceed projected demands in a normal water year. In dry years, implementation of GSWC's Water Shortage Contingency Plan may be used, if necessary, to further reduce demand and ensure adequate supply. The demand projection is based on SACOG household and employment projections for the region, which include development of the site as part of building out the Rancho Cordova General Plan. The proposed project would have an annual water demand of approximately 2 AFY. Therefore, the GSWC would have adequate water supplies to serve the proposed project in addition to its other commitments and no new or expanded water entitlements would be required.

GSWC surface water supplies are treated at the Coloma Water Treatment Plant and the Pyrites Water Treatment Plant, which have a combined treatment capacity of approximately 14.4 million gallons per day. The project's estimated water demand of 7.7 AFY equates to an average of 6,874 gallons per day, which represents 0.05 percent of the combined treatment plant capacity. Given this negligible increase in demand for treatment capacity, the project would not trigger the need for new or expanded treatment facilities. Little of GSWC's service area remains undeveloped and full buildout is anticipated by 2020. Thus, the proposed project would not contribute to a cumulative need for new or expanded treatment facilities. These impacts would be less than significant.

- c) **Less Than Significant Impacts.** See Response 9(c-f). As described previously, the project site would be served by the City's public drainage system and the proposed project would not substantially increase runoff or alter the existing drainage patterns. The project would include on-site drainage improvements to convey runoff to the drainage system in the adjacent roadway. The project would be required to implement an SWPPP including BMPs to minimize erosion and siltation during and post-construction. The project would also be required to implement stormwater quality control measures provided in the Department of Water Resources' *Stormwater Quality Design Manual for the Sacramento and South Placer Regions* including source control and treatment control measures. In addition, the project would be subject to City of Rancho Cordova Municipal Code Chapter 15.12, Storm Water Management and Discharge Control, to control discharges during project operation.

## ENVIRONMENTAL CHECKLIST

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The potential environmental effects of constructing the drainage improvements included in the project are evaluated throughout this initial study and, where necessary, mitigation measures are provided to reduce project impacts to less than significant levels. Potential environmental effects include disturbance of biological and/or cultural resources, soil erosion, release of hazardous materials and/or air emissions associated with construction equipment, and temporary noise and traffic impacts. This impact would be less than significant.

- f,g) **Less Than Significant Impact.** The proposed project would be served by a commercial hauler which collects and transports waste generated on the site to the Sacramento County (Kiefer) Landfill. In 2005, the landfill was estimated to have a remaining capacity of nearly 113 million cubic yards, which is approximately 96 percent of its total permitted capacity of 117.4 million cubic yards, and an estimated closure date of 2064 (CalRecycle 2016).

The project would be subject to Rancho Cordova Municipal Code Chapter 16.92 (Construction and Demolition (C&D) Debris) which would require the project contractor to prepare a waste management plan that outlines the methods to be used to ensure all recyclable construction waste is diverted for recycling. Once in operation, the proposed project would generate a negligible volume of solid waste which would not cause the Keifer Landfill to exceed its permitted capacity. The project would comply with all applicable solid waste regulations including the location and design of on-site garbage enclosures. Therefore, this impact would be less than significant.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>18. MANDATORY FINDINGS OF SIGNIFICANCE</b>				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of rare or endangered plants or animals, 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"/>
b) Does the project have impacts that are 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DISCUSSION OF IMPACTS

- a) **Less Than Significant Impact With Mitigation Incorporated.** As discussed throughout this initial study, the proposed project would not result in any significant impacts that cannot be mitigated to a level of less than significant. As discussed in subsection 4, Biological Resources, with mitigation incorporated (MM 4.1 through MM 4.5), the proposed project would result in less than significant impacts to biological resources. As discussed in subsection 5, Cultural Resources, the project site does not contain any significant historical resources that could be affected by project construction.
- b) **Less Than Significant Impact With Mitigation Incorporated.** A significant impact may occur if the project, in conjunction with related projects, would result in impacts that are less than significant when viewed separately but would be significant when viewed together. The potential cumulative effects of the proposed project were evaluated in the City's General Plan EIR (2006a) which analyzed build out of the entire city, including the project site. The proposed project would be consistent with the General Plan and would, in fact, result in less intense development than the office use considered for the site in the General Plan EIR. Therefore, the project would not result in any new contributions to cumulative impacts beyond that identified in the City's General Plan EIR. In addition, as discussed throughout this initial study, the proposed project would not result in any significant and unmitigable impacts in any environmental issue areas. In all cases, the impacts associated with the project would be reduced to a less than significant level through the implementation of mitigation, are

## ENVIRONMENTAL CHECKLIST

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limited to the project site, or are of such a negligible degree that they would not result in a significant contribution to any cumulative impacts.

- c) **Less Than Significant Impact With Mitigation Incorporated.** The proposed project does not have the potential to significantly adversely affect humans, either directly or indirectly, once mitigation measures are implemented. While some of the proposed project's impacts were identified as having a potential to significantly impact humans, with implementation of the identified mitigation measures and standard requirements, these impacts would be less than significant. All potentially significant impacts are avoidable, and the City of Rancho Cordova would ensure that measures imposed to protect human beings are implemented.

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**ENVIRONMENTAL CHECKLIST**

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# **APPENDICES**

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**APPENDIX A – LAND USE COVENANT AND  
DTSC CONSISTENCY LETTER**





## Department of Toxic Substances Control

**Matthew Rodriguez**  
Secretary for  
Environmental Protection

Barbara A. Lee, Director  
8800 Cal Center Drive  
Sacramento, California 95826-3200

**Edmund G. Brown Jr.**  
Governor

March 24, 2015

***Via E-Mail Only***

Mr. Michael Liston  
Facility Director  
San Juan Soccer Club  
[h2odawg@pacbell.net](mailto:h2odawg@pacbell.net)

PURITY OIL SALES – DELTA GUNITE PARCEL C LAND USE, WHITE ROCK ROAD & KILGORE ROAD, RANCHO CORDOVA, CALIFORNIA

Dear Mr. Liston:

The Department of Toxic Substances Control (DTSC) is writing this letter in response to your proposal for a soccer field facility development on Parcel C (5-acre) of the former Purity Oil Sales site (the Site), located at 3181 Kilgore Road, Rancho Cordova, California. The soil and groundwater at the Site was remedied per April 4, 2013 Remedial Action Plan and certified as completed on June 30, 2014. Soils were not remediated to levels protective for unrestricted land use, so a land use covenants (LUC) was recorded on Parcel C on June 22, 2010 to provide requirements and restrictions to minimize inappropriate exposures and prevent inappropriate land use.

DTSC finds that the proposed land use of a soccer field facility is not inconsistent with the LUC on Parcel C. Compliance with terms of the LUC will minimize inappropriate exposures and make your proposed project safe. Please notice that under Restrictions and Requirements in the LUC, the soil management plan is necessary for any activities on the Site that will disturb the soil. For your reference, the Site remediation records are available at [www.envirostor.dtsc.ca.gov/public/](http://www.envirostor.dtsc.ca.gov/public/).

You may contact me at (916) 255-3851 or [Cindy.Chain-Britton@dtsc.ca.gov](mailto:Cindy.Chain-Britton@dtsc.ca.gov) if you have any questions.

Sincerely,

Cindy Chain-Britton  
Hazardous Substances Engineer  
Brownfields and Environmental Restoration Program  
Department of Toxic Substances Control

cc: See next page.

Mr. Michael Liston  
March 24, 2015  
Page 2

cc: Fernando Amador, P.E., Chief  
Sacramento Responsible Party Unit  
Brownfields and Environmental Restoration Program  
Department of Toxic Substances Control  
8800 Cal Center Drive  
Sacramento, California 95826  
[Fernando.Amador@dtsc.ca.gov](mailto:Fernando.Amador@dtsc.ca.gov)

RECORDING REQUESTED BY:

White Rock & Kilgore, LLC  
P.O. Box 37  
Rancho Cordova, CA 95741

WHEN RECORDED, MAIL TO:

Department of Toxic Substances Control  
8800 Cal Center Drive  
Sacramento, California 95826  
Attention: Fernando Amador, P.E., Chief  
Sacramento Responsible Party Unit  
Brownfields and Environmental  
Restoration Program



Sacramento County Recorder  
David Villanueva, Clerk/Recorder  
BOOK **20140610** PAGE **0002**

Check Number 3803  
Tuesday, JUN 10, 2014 8:05:36 AM  
Ttl Pd \$57.00 Rcpt # 0008235900

REB/51/1-13

COVENANT TO RESTRICT USE OF PROPERTY

**ENVIRONMENTAL RESTRICTION**

Sacramento County Assessor's Parcel No.: 072-0260-006

Owner: White Rock & Kilgore, LLC

(Former Brighton Oil Facility)

This Covenant and Agreement (Covenant) is made by and between White Rock & Kilgore, LLC (the "Covenantor"), current owner of property located in Rancho Cordova, County of Sacramento, State of California, described in Exhibit A, attached hereto and incorporated herein by reference (the "Property"), and the Department of Toxic Substances Control ("Department"). Pursuant to Civil Code section 1471, the Department has determined that this Covenant is reasonably necessary to protect present or future human health or safety or the environment as a result of the presence on the land of hazardous materials as defined in Health and Safety code section 25260. The Covenantors and the Department, collectively referred to as the "Parties," hereby agree, pursuant to Civil Code section 1471 and Health and Safety Code section 25355.5, that the use of the Property be restricted as set forth in this Covenant.

ARTICLE I  
STATEMENT OF FACTS

1.01. The Property, referred to as Parcel A, is approximately four acres and is more particularly described in Exhibit A. The Property is located near the corner of White Rock and Kilgore Road in the City of Rancho Cordova, California, and is shown on the map attached as Exhibit B. The Property is also identified as Sacramento County Assessor's Parcel No. 072-0260-006.

1.02. History. The Property was part of a 13.9 acre site used for operations of the Brighton Oil Company (Brighton Oil) beginning in the mid-1950s. These operations

included reprocessing used crankcase oil into other oils of various grades for eventual resale. Several aboveground storage tanks were used for the storage and treatment of oils. Two unlined ponds were used for the collection of wastewater and waste oil products produced by the reprocessing operations. Oil saturated filtration clay was generated by the reprocessing operations and was reportedly disposed of at the site. In approximately 1965, the Brighton Oil reprocessing operation (excluding the land) was sold to Purity Oil Sales (Purity). Purity reportedly continued to operate the oil reprocessing facilities until approximately 1968. Because elevated concentrations of hazardous substances were detected in soil and groundwater at the Property, it was added to the California State list of hazardous substance release sites selected for response action on January 1, 1985.

On January 4, 2002, the Department filed suit in the United States District Court, Eastern District of California, under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), seeking recovery of costs of response to releases and threatened releases of hazardous substance at or from the Property, and for abatement of a public nuisance. *California Department of Toxic Substances Control v. Brighton Oil Company et al.*, CIV-S-02-0018 GEB-GGH. The current owner of Parcel A, White Rock and Kilgore LLC, purchased the Property in December 2005 and is named as a defendant in the above action. Under the oversight of a Magistrate Judge acting as a mediator, defendants and cross-defendants in the action conducted the required site investigations and prepared a draft Remedial Action Plan. White Rock & Kilgore LLC agreed to record this Covenant as part of a settlement in the CERCLA action and is voluntarily imposing the restrictions and requirements set forth herein on the Property and all future Owners of the Property.

1.03. Remedial Action. The final Feasibility Study and Remedial Action Plan Addendum (RAP) prepared by URS Corporation, dated June 2011, recommends the excavation and disposal of shallow soil within a targeted area, installation of a cap covering the area of the disposal pits to reduce rainwater infiltration and to eliminate exposure, monitored natural attenuation (MNA) of groundwater, and land use restrictions to address the health and environmental risks at the Property. The addendum amends the final draft Feasibility Study and Remedial Action Plan prepared by Bureau Veritas North America (incorporated as Appendix A to the RAP) by adding a fourth alternative to the remedy analysis. A map showing the cap location is in Exhibit B.

The RAP was developed in accordance with Health and Safety Code, division 20, chapter 6.8 under the oversight of the Department. The RAP and a notice of exemption pursuant to the California Environmental Quality Act, Public Resources Code section 21000 et seq., were released for public review and comment and subsequently approved by the Department on December 16, 2011. Because hazardous substances, as defined in Health and safety Code section 25316, which are also hazardous materials as defined in Health and Safety Code section 25260, remain in the soil, soil gas, and groundwater above unrestricted cleanup goals, the RAP provides that land use restrictions, in the form of this Covenant, be required as part of the site remediation.

Remediation includes removal of areas of impacted shallow soil, installation of a cap over the area of the former disposal pits, implementation of land use restrictions in



the form of this Covenant, and MNA in groundwater. The option to develop a site risk management plan (SRMP) is also a component of the remedy to allow flexibility from the Restrictions and Requirements sections 4.02, 4.03, 4.04 and 4.05. For instance, where an entity wants to excavate soil, an SRMP for a soil management plan would need to be approved by the Department.

1.04. Contamination. The soil investigations show that soil and soil gas underlying portions of the Property is impacted with variable levels of volatile organic carbons (VOCs), total petroleum hydrocarbon (TPH), polycyclic aromatic hydrocarbons, PCBs, perchlorate and metals. Naphthalene was found in soil at concentrations up to 600 mg/kg, which exceeded the cleanup target of 95.8 mg/kg identified in the Health Risk Assessment. Lead concentrations were found up to 3,890 mg/kg, which exceeded the cleanup target of 800 mg/kg identified in the Health Risk Assessment. Remedial actions have been implemented to minimize direct exposure to soil contaminants exceeding health based cleanup targets.

Soil gas samples contain benzene, tetrachloroethene, and vinyl chloride concentrations that cumulatively exceed the acceptable risk targets identified in the Health Risk Assessment for the indoor commercial/industrial land use scenarios. Target concentrations established in the feasibility study are 248 ug/m<sup>3</sup> for Benzene, 1580 ug/m<sup>3</sup> for tetrachloroethene, and 94.8 ug/m<sup>3</sup> for vinyl chloride for a commercial/industrial indoor air pathway scenario. Health risks associated with future indoor vapor exposures are primarily attributable to the capped area (former disposal pits) and areas immediately surrounding the capped area.

The groundwater investigations show that groundwater is impacted by VOCs, perchlorate, and petroleum hydrocarbons. Ingestion of groundwater is not considered to be a complete exposure pathway at the Property. In addition impacted zones are not being used by local water purveyors for drinking water purposes. Trends over the past 20 years indicate that groundwater concentrations will continue to decrease due to natural attenuation occurring within the subsurface. Long term groundwater monitoring from site wells will be conducted to verify continued concentration decrease through MNA to the established numerical water quality objectives.

1.05. Based on the Final Health Risk Assessment (HRA) completed for the intended commercial/industrial land use, the Department concluded that use of the Property as a residence, hospital, school for persons under the age of 21 or day care center would entail an unacceptable cancer risk. The Department further concluded that the Property, as remediated, and subject to the restrictions of this Covenant, does not present an unacceptable threat to human safety or the environment, if limited to commercial and industrial use. Remedial Action Objectives for the cap and surrounding areas include prevention of direct exposure to indoor air containing VOCs for commercial/industrial land use. The HRA results include a degree of uncertainty due to limited information about the future use and development/grading of the Property. Significant alteration to site elevations or subsurface conditions may change the effects of vapor transport predicted in the HRA. To maintain maximum health protection, the HRA results suggest that vapor intrusion protection measures be incorporated into design of any building construction in the cap area including an approximately 20 foot

buffer around the cap area. These controls will be implemented through the SRMP, which must be approved by the Department prior to development.

## ARTICLE II DEFINITIONS

2.01. Department. "Department" means the California Department of Toxic Substances Control and includes its successor agencies, if any.

2.02. Environmental Restrictions. "Environmental Restrictions" means all protective provisions, covenants, restrictions, prohibitions, and terms and conditions as set forth in any section of this Covenant.

2.03. Improvements. "Improvements" includes, but is not limited to: buildings, structures, roads, driveways, improved parking areas, wells, pipelines, or other utilities.

2.04. Lease. "Lease" means lease, rental agreement, or any other document that creates a right to use or occupy any portion of the Property.

2.05. Occupant. "Occupant" means Owners and any person or entity entitled by ownership, leasehold, or other legal relationship to the right to occupy any portion of the Property, except for the Receiver.

2.06. Owner. "Owner" means the Covenantor, and all successors in interest including heirs and assigns, who at any time hold title to all or any portion of the Property, and does not include the Receiver.

## ARTICLE III GENERAL PROVISIONS

3.01. Restrictions to Run with the Land. This Covenant sets forth Environmental Restrictions that apply to and encumber the Property and every portion thereof no matter how it is improved, held, used, occupied, leased, sold, hypothecated, encumbered, and/or conveyed. This Covenant: (a) runs with the land pursuant to Civil Code section 1471 and Health and Safety Code section 25355.5; (b) inures to the benefit of and passes with each and every portion of the Property; (c) is for the benefit of, and is enforceable by the Department; and (d) is imposed upon the entire Property unless expressly stated as applicable only to a specific portion thereof.

3.02. Binding upon Owners/Occupants. Pursuant to Civil Code section 1471, subdivision (b), all successive Owners of the Property are expressly bound hereby for the benefit of the Department. This Covenant binds all Owners of the Property, their heirs, successors, and assigns, and the agents, employees, and lessees of the Owners, heirs, successors, and assigns.

3.03. Incorporation into Deeds and Leases. This Covenant shall be incorporated by reference in each and every deed and Lease for any portion of the Property.

3.04. Conveyance of Property. The Owner shall provide written notice to the Department and the Receiver not later than thirty (30) days after any conveyance of any ownership interest in the Property (excluding mortgages, liens, and other non-possessory encumbrances). The written notice shall include the name and mailing address of the new owner of the Property and shall reference the site name and Assessor's Parcel number (APN) listed on page one of this Covenant. If the new owner's property has been assigned a different APN, each such APN that covers the Property must be provided. The Department shall not, by reason of this covenant, have authority to approve, disapprove, or otherwise affect the proposed conveyance, except as otherwise provided by law or by administrative order.

3.05. Costs of Administering the Covenant to be paid by Owner. The Department has already incurred and will in the future incur costs associated with the administration of this Covenant. Therefore, the Covenantor hereby covenants for the Covenantor and for all subsequent Owners that, pursuant to California Code of Regulations, title 22, section 67391.1(h), the Owner agrees to pay the Department's costs in administering the Covenant.

#### ARTICLE IV RESTRICTIONS AND REQUIREMENTS

4.01. Prohibited Uses. The Property shall not be used for any of the following purposes:

- (a) A residence, including any mobile home or factory built housing,
- (b) constructed or installed for use as residential human habitation.
- (c) A hospital for humans.
- (d) A public or private school for persons under 21 years of age.
- (e) A day care center for children.

4.02. Soil Management.

- (a) No activities that will disturb the soil (e.g., excavation, grading, removal, trenching, filling, earth movement or mining) or construction of structures shall be allowed on the Property without an SRMP approved in writing by the Department in advance.
- (b) Any contaminated soils brought to the surface by grading, excavation,
- (c) trenching or backfilling shall be managed in accordance with all applicable
- (d) provisions of state and federal law.

4.03. Prohibited Activities. The following activities shall not be conducted at the Property:

- (a) Drilling for water, oil or gas without prior written approval by the Department.
- (b) Extraction of groundwater for purposes other than site remediation or construction dewatering that has prior approval from the Department.

- (c) Damaging or destroying, or preventing access by the Department to, any of the groundwater monitoring wells and soil vapor monitoring wells on the Property, unless and until notified by the Department in writing that such well has been properly abandoned and destroyed.

4.04. Cap Area Restrictions. The following restrictions shall apply to the capped area:

- (a) No buildings may be placed over the capped area, unless authorized by the
- (b) Department prior to construction, in writing;
- (c) Owner shall maintain the cap in good condition and repair the cap as
- (d) necessary;
- (e) The capped area may be used for a parking lot and/or driveway, as long as the integrity of the cap is maintained and infiltration of liquids is prevented; and
- (f) Utilities that do not carry liquids may be installed in the capped area, but any excavation must be approved by the Department prior to installation, and will be subject to requirements to manage soil appropriately, and repair the cap.

4.05. Soil Vapor. No enclosed building or structure (including tunnels) may be constructed in the cap area including an approximately 20 foot buffer around the cap area if it does not include Vapor Mitigation. "Vapor Mitigation" means design features that prevent volatile organic compounds from accumulating in the building or structure at a level that poses an unacceptable risk to human health and safety and the environment. Examples of Vapor Mitigation include, but are not limited to, use of a vapor barrier system and/or a ventilation system. Vapor Mitigation is not required if it is demonstrated to the Department's satisfaction before construction begins, as evidenced by a writing from the Department, that contamination from vapor intrusion will not pose an unacceptable risk to human health and safety and the environment.

4.06. Access for Department. The Department, including its contractors, agents and employees, shall have reasonable right of entry and access to the Property (along with all necessary equipment) for inspection, monitoring, and other activities consistent with the purposes of this Covenant as deemed necessary by the Department in order to protect the public health or safety, or the environment. In addition, the Department shall have reasonable right of entry and access for the purpose of implementing any groundwater operation and maintenance, including, but limited to, groundwater monitoring, new well installation and/or well decommissioning, until the Department determines that no further operation and maintenance is required.

4.07. Inspection and Reporting Requirements. The Owner shall conduct an annual inspection of the Property verifying compliance with this Covenant, and shall submit an annual inspection report to the Department for its approval by **(January 15<sup>th</sup>)** of each year. The annual inspection report must include the dates, times, and names of those who conducted the inspection and reviewed the annual inspection report. It also shall describe how the observations were performed that were the basis for the statements and conclusions in the annual inspection report (e.g., drive by, fly over, walk

in, etc.). If violations are noted, the annual inspection report must detail the steps taken to return to compliance. If the Owner identifies any violations of this Covenant during the annual inspections or at any other time, the Owner must within **(10 days)** of identifying the violation: determine the identity of the party in violation, send a letter advising the party of the violation of the Covenant, and demand that the violation cease immediately. Additionally, copies of any correspondence related to the violation of this Covenant shall be sent to the Department within **(10 days)** of its original transmission.

#### ARTICLE V ENFORCEMENT

5.01. Enforcement. Failure of the Owner or Occupant to comply with this Covenant shall be grounds for the Department to require modification or removal of any Improvements constructed or placed upon any portion of the Property in violation of this Covenant. Violation of this Covenant shall be grounds for the Department to pursue administrative, civil or criminal actions, as provided by law.

#### ARTICLE VI VARIANCE, REMOVAL, AND TERM

6.01 Variance. Any person may apply to the Department for a written variance from the provisions of this Covenant. Such application shall be made in accordance with Health and Safety Code section 25223.

6.02. Removal. Any person may apply to the Department to remove one or more terms of this Covenant as they apply to all or any portion of the Property. Such application shall be made in accordance with Health and Safety Code section 25224.

6.03. Term. Unless ended in accordance with paragraph 6.02, by law, or by the Department in the exercise of its discretion, this Covenant shall continue in effect in perpetuity.

#### ARTICLE VII MISCELLANEOUS

7.01. No Dedication Intended. Nothing set forth in this Covenant shall be construed to be a gift or dedication, or offer of a gift or dedication, of the Property, or any portion thereof to the general public or anyone else for any purpose whatsoever.

7.02. Recordation. The Covenantor shall record this covenant, with all referenced Exhibits, in the County of Sacramento within ten (10) days of the Covenantor's receipt of a fully executed original.

7.03. Notices. Whenever any person gives or serves any Notice ("Notice" as used herein includes any demand or other communication with respect to this Covenant), each such Notice shall be in writing and shall be deemed effective: (1) when delivered, if personally delivered to the person being served or to an officer of a corporate party being served; or (2) three (3) business days after deposit in the mail, if mailed by United States mail, postage paid, certified, return receipt requested:

To Owner:  
White Rock & Kilgore LLC  
Attn: Mark B. Stauffer  
3043 Gold Canal Drive, Suite 250  
Rancho Cordova, California 95670

To Department:  
Department of Toxic Substances Control  
Attention: Fernando Amador  
8800 Cal Center Drive  
Sacramento, California 95826-3200

Any party may change its address or the individual to whose attention a Notice is to be sent by giving written Notice in compliance with this paragraph.

7.04. Partial Invalidity. If any portions of this Covenant or any of its terms are determined by a court of competent jurisdiction to be invalid for any reason, the surviving portions of this Covenant shall remain in full force and effect as if such portion found invalid had not been included herein.

7.05. Statutory References. All statutory references include successor provisions.

7.06. Incorporation of Attachments. All attachments and exhibits to this Covenant are incorporated herein by reference.

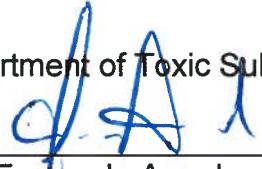
IN WITNESS WHEREOF, the Parties execute this Covenant.

Covenantor:

By:   
Mark B. Stauffer  
White Rock & Kilgore LLC

Date: 6/9/14

Department of Toxic Substances Control:

By:   
Fernando Amador

Date: 6/6/14

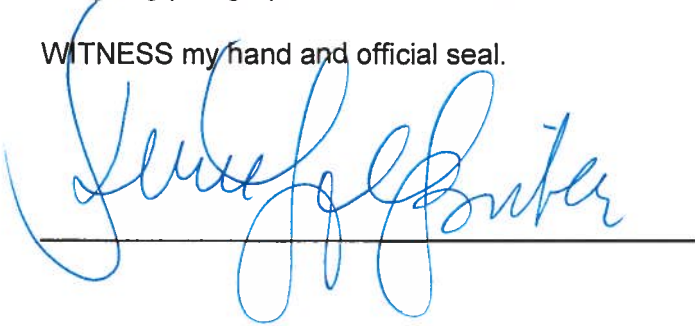
*Loose California Air-Purpose Acknowledgement attached*

STATE OF CALIFORNIA  
COUNTY OF SACRAMENTO

On **JUNE 9, 2014** before me, **KERIE LEE BIEBER, Notary Public** personally appeared, **\*\*MARK B. STAUFFER\*\*** who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



**CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT**

CIVIL CODE § 1189

State of California

County of Sacramento }

On June 6, 2014 before me, Theresa M. Vigil, Notary Public  
Date Here Insert Name and Title of the Officer

personally appeared Fernando A. Amador  
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Signature: [Handwritten Signature]  
Signature of Notary Public

Place Notary Seal Above

**OPTIONAL**

*Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.*

**Description of Attached Document**

Title or Type of Document: Covenant to Restrict Use of Property

Document Date: June 6, 2014 Number of Pages: 11 + attach

Signer(s) Other Than Named Above: Mark B. Stauffer

**Capacity(ies) Claimed by Signer(s)**

Signer's Name: \_\_\_\_\_

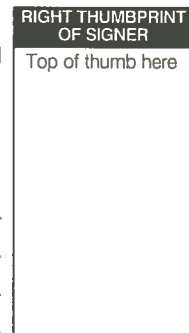
- Corporate Officer — Title(s): \_\_\_\_\_
- Individual
- Partner —  Limited  General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: \_\_\_\_\_



Signer Is Representing: \_\_\_\_\_

Signer's Name: \_\_\_\_\_

- Corporate Officer — Title(s): \_\_\_\_\_
- Individual
- Partner —  Limited  General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: \_\_\_\_\_



Signer Is Representing: \_\_\_\_\_

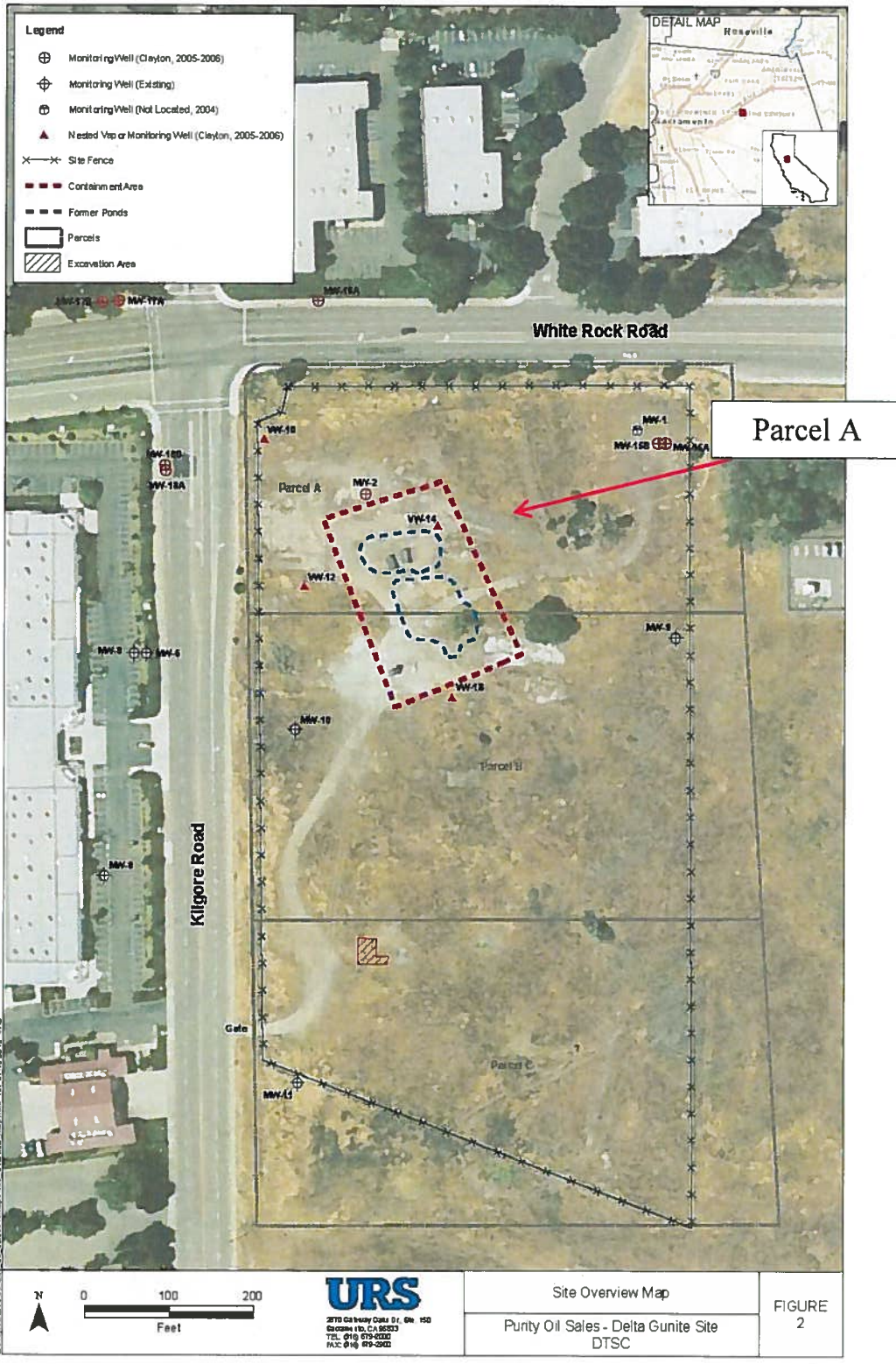


EXHIBIT A

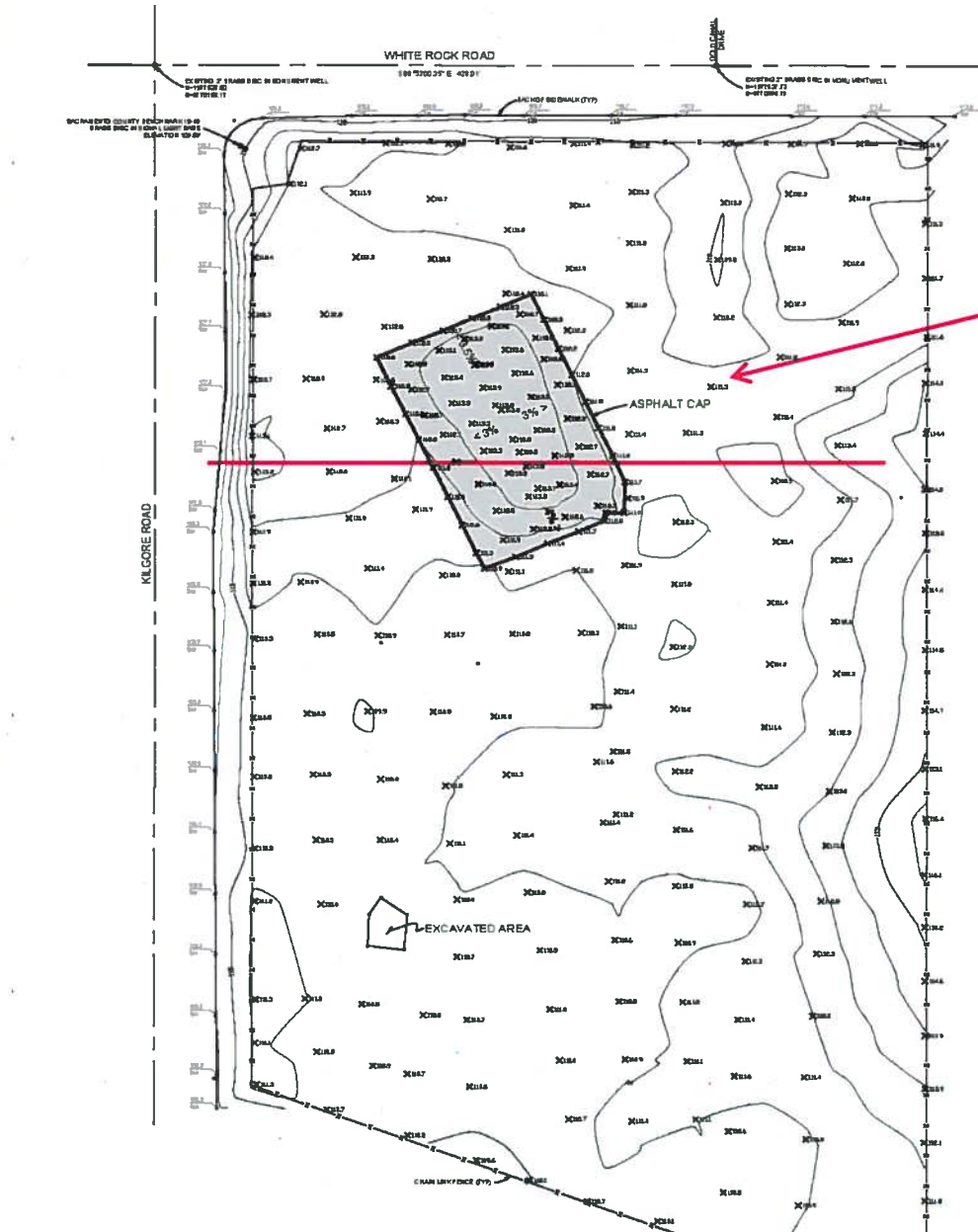
072-0260-006 (Assessor's Parcel No.)

PARCEL "A", AS SAID PARCEL IS SHOWN ON THAT CERTAIN PARCEL MAP ENTITLED "A PORTION OF SUBDIVISION 'GEORGE HANLON NO.2 165 5/10 A'" AS SAID SUBDIVISION IS DELINEATED AND SO DESIGNATED ON THE MAP ENTITLED "PLAT OF SUBDIVISION OF THE RANCHO RIO DE LOS AMERICANOS 1 B.M. 2", RECORDED IN THE OFFICE OF THE RECORDER OF SACRAMENTO COUNTY ON NOVEMBER 14, 1980, IN BOOK 61 OF PARCEL MAPS, AT PAGE 30.

# EXHIBIT B



SHEETS: 3  
SHEET NO: 3  
PROJECT: ASPHALT CAP  
X-Post Type



Parcel A

CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL  
RANCHO CORDOVA, CALIFORNIA  
PURITY OIL SALES - DELTA GUNITE SITE

ASPHALT CAP  
FINAL AS-BUILT SURVEY



FIGURE  
3



1" = 80'  
0 80' 160'

NOTE: ASPHALT CAP SLOPES SHOWN ARE APPROXIMATE.

SURVEY PERFORMED BY ROBERT HEINEN CONSULTING  
ENGINEERS (RHCE) ON 19 JUNE 2013



## **APPENDIX B – LIGHTING STUDY**



**Environmental Impact Assessment of Lighting**  
**San Juan Soccer League**  
**Kilgore Road Soccer Field Complex**  
**Rancho Cordova, CA**

James R Benya, PE, FIES, FIALD

**BENYA BURNETT CONSULTANCY**

Davis, CA

December 21, 2015

## Table of Contents

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### Contents

Table of Contents .....	2
Introduction .....	3
Documentary .....	4
Rancho Cordova Municipal Code .....	4
Zoning .....	4
Lighting Standards and Recommendations .....	5
Energy Code .....	5
Existing Conditions .....	5
Daytime .....	5
Evening and Night .....	6
Proposed Lighting .....	6
Sports Lighting .....	6
Parking Lot Lighting .....	7
Analysis .....	7
Sports Lighting .....	7
Parking Lot Lighting .....	8
Conclusion and Recommendations .....	9
Summary .....	10
Exhibit “A” – Musco Calculations Submitted for the Purposes of the Environmental Impact Assessment .....	11
Exhibit “B” – Cree Calculations Submitted for the Purposes of the Environmental Impact Assessment .....	11



## Introduction

The proposed Kilgore Road Soccer Complex (hereinafter “Complex”) comprises about 10 acres on currently undeveloped land on the east side of Kilgore Road just south of White Rock Road in Rancho Cordova, California.



*Figure 1: Image from Google Earth looking north towards White Rock Road. The Soccer Complex is proposed to be located beyond the white sign on the right.*

Among the potential environmental impacts of this project involves the use of artificial light at night (ALAN) and resulting light pollution. There are three distinct types of light pollution:

- Light emitted upwards or reflected upwards is scattered by air and by airborne particles, causing artificial sky glow. Artificial sky glow makes stars difficult or impossible to see.
- Light trespass, which occurs when light travels onto adjacent properties, affecting view and being generally annoying.
- Glare, which occurs when light sources concentrate significant candlepower that causes a glare reflex, as when high beam headlights are viewed by drivers.

The impacts of light pollution range from offsite light trespass and offsite glare to disruption of the nocturnal environment and loss of the natural beauty of the night.

Sports lighting is among the brightest outdoor lighting systems in common use. Significant lighting impacts are sufficiently common to warrant study as part of an environmental impact assessment of any proposed sports project with field lighting.

The primary purpose of this report is to determine the extent to which the lighting for the site will cause environmental impact(s) under the California Environmental Quality Act (CEQA), in the context of land use planning of the City of Rancho Cordova.

## Documentary

### Rancho Cordova Municipal Code

Section 23.725 of the Rancho Cordova Municipal Code (hereinafter “the Code”) contains basic requirements to prevent light pollution, including requiring full shielding of light sources. Its stated purpose is “... *is to regulate lighting to balance the safety and security needs for lighting with the city’s desire to preserve dark skies and to ensure that light trespass and glare have negligible impact on surrounding property (especially residential) and roadways.*”

Sports lighting systems are typically mounted on poles between 60 and 80 feet tall. The Code Section 23.725.070 (E.) limits lighting to 24’ mounting height limits.

The most applicable section is 23.725.070 (I.) which states, “*Sports Fields/Outdoor Activity Areas. Where playing fields or other special activity areas are to be illuminated, lighting fixtures shall be mounted, aimed, and shielded so that the light falls within the primary playing area and no significant off-site light trespass is produced. Additionally, the lights shall be turned off within one hour after the end of the event.*”

Code Section 23.725.080 requires submission of calculations.

### Zoning

The City of Rancho Cordova has zoned this parcel and surrounding parcels “Office Professional Mixed Use”. This zone extends south over 1,200 feet, west over 1,500 feet, and north about 500 feet before becoming an industrial and office mixed use zone. To the east, an open space zone begins about 200 feet from the Complex, but its character is industrial (for the concrete sided Folsom South Canal). A residential zone for the Stone Creek Community is the only nearby area that is not of a consistent character, and it is separated from the commercial- and industrially-zoned area including the Complex site by a tall wall. See Figure 3.



Figure 2: Looking east from Kilgore Road along International Drive. The Stone Creek residential development is largely hidden behind the long wall on the right in this image.

## Lighting Standards and Recommendations

In the United States, the American National Standards Institute (ANSI) is a 501(c)3 organization that "...oversees the creation, promulgation and use of thousands of norms and guidelines that directly impact businesses in nearly every sector: from acoustical devices to construction equipment, from dairy and livestock production to energy distribution, and many more. ANSI is also actively engaged in accreditation - assessing the competence of organizations determining conformance to standards." In the field of illumination, the only ANSI accredited organization that establishes standards and best practices in lighting is the Illuminating Engineering Society (IES) based in New York. IES publishes lighting standards, recommendations, guidelines and other documents. The IES Lighting Handbook, 10<sup>th</sup> Edition, is the most current publication that addresses the impacts of light and provides recommended values for assessing proposed designs. For the purposes of this study, Table 26.4, which establishes "lighting zones" that describe the ambient light at night and general quality of the local environment, and Table 26.5, which establishes maximum allowable illuminance at the property line, will be used.

## Energy Code

California Title 24, Part 6, Section 147 restricts lighting watts and requires certain lighting controls. Sports lighting is exempt from this section of the Code. However, the parking lot lighting and any other lighting, such as restrooms or other structures, will be required to comply. With regard to lighting impacts, Title 24 requires fully shielded luminaires above a threshold wattage not met by the proposed parking lot lighting.

## Existing Conditions

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I visited the site between 1550 and 1900 hours on November 30, 2015. My visit included being on the site several times including daylight, dusk and night. In addition, I drove throughout adjacent areas under all three conditions.

## Daytime

The site is flat and undeveloped. As illustrated in Figure 1, adjacent properties are largely commercial office and light industrial uses, with mostly single story structures. The office complex to the south (Figure 2) is a two story structure.

In addition to the water tower that is part of the subdivision to the south, the tallest visible structures nearby include electric transmission towers that follow Sunrise along the Folsom South Canal, along International Drive, and to the south from International Drive along Kilgore Road. These towers all appear to be about 50 to 60 feet tall. The street light poles and mast arms along Kilgore and neighboring major collectors and arterials appear to be about 25-30 feet tall.

Trees across Kilgore Road from the site are also about 50-60 feet tall, as shown in Figures 1, 2 and 3.



Figure 3: Image from Google Earth looking south on Kilgore Road towards International Drive.

### Evening and Night

Because the site is undeveloped and borders on open space, it is dark beginning after sunset. However, the surrounding streets and developed commercial sites employ conventional lighting. Street lighting has been changed to 4000K or higher LED, and surrounding parking lots and site drives employ a conventional mixture of metal halide and high pressure sodium lighting systems.

Due to the reasonably uniform, white light for all surrounding streets and the consistently well lighted parking lots of commercial buildings, the appropriate lighting zone per the IES Lighting Handbook Table 26.4 is probably LZ-3, because of the likelihood of additional commercial development in the area, the nearby presence of a major arterial (Sunrise), and the well-established buffer surrounding the site.

### Proposed Lighting

The Complex consists of two full size artificial turf soccer fields, a turf junior field and warm-up/practice area, and parking lots. Along the eastern boundary of the development will be a cell tower.

### Sports Lighting

The manufacturer is Musco, a sports lighting company. The sports lighting system will consist of 13 poles 60' tall, with a total of 124 LED 5700K luminaires. I am familiar with this lighting

system and have recently reviewed a completed installation of this system in Arizona, located in a very dark area near one of the region's premier observatories.

The manufacturer submitted an original set of photometrics demonstrating sharp cutoff just beyond the property line. I requested and received additional photometric calculations including illuminance at the property line and at the Kilgore Rd. curb in the vertical plane. See Exhibit "A".

### Parking Lot Lighting

The engineer produced a design using 9 poles and 27 luminaires. The luminaire manufacturer is Cree, a manufacturer of general commercial indoor and outdoor lighting. The engineer proposes to use Cree OSQ luminaires mounted at 24' as described in Exhibit "B".

## Analysis

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### Sports Lighting

Sports lighting trespass and related glare is a common complaint. The best indicator of excessive off-site impact, other than visual evaluation after-the-fact, is to review vertical illuminance in the plane of the property line projected upward at least to the height of the poles. A well shielded lighting system will exhibit maximum trespass levels not exceeding IES Handbook Table 26.5, which sets a maximum allowable value of 8 lux (0.8 footcandles). Musco's calculations show a worst case trespass level 5 feet above the ground of 0.7 footcandles along Kilgore Road. Equally low levels are maintained at all heights up to 35' approximately 15 yards beyond the out-of-bounds line all around all of the sports fields. From my personal experience reviewing similar fields, this sports lighting system will produce little or no offsite glare or trespass.

Sports lighting systems always produce a light "dome" over the area. This is solely the result of atmospheric light scattering, reflected light from the ground, and the high light levels often associated with sports lighting. The dome is immitigable, but of diminishing impact as the distance from the field increases. In Figure 4, the light dome from a high school football field is visible from a residential neighborhood about ¼ mile away.

From my personal professional experience, the light dome associated with the Musco LED system is significantly less than light domes associated with almost all other sports lighting systems. This is largely due to the lack of off-site spill and trespass, the result of optical design that limits spill light. Moreover, the light dome will be mitigated by using modest sports light levels. The proposed sports lighting design will produce light levels about 30 footcandles on the field, which per IES Handbook Table 35.3 are actually lower than Class IV, which is 50 footcandles. The football field lighting in figure 4 produces over 70 footcandles on the field.

The sports lighting system appears to meet local code, provided that it is equipped with lighting controls that ensure lights are turned off within 1 hour of the end of an evening sports event.



*Figure 4: Light dome, Hoover High School San Diego Football Field, Musco Metal Halide Lighting, by the author, 2013.*

### **Parking Lot Lighting**

The design calls for 5700K luminaires and produces light levels that are generally consistent with commercial light levels in the area, with an average of about 1.5 footcandles. The engineer did not produce vertical illumination levels at the property line, but from my experience and the calculated horizontal light trespass levels are reasonable and closely meet the intent of IES Handbook Table 26.5.

The shielding and appropriate brightness of commercial parking lot luminaires can be ascertained by the “BUG” (backlight-uplight-glare) system. The proposed Cree luminaire is rated BUG 3-0-3 which means it has no uplight and is suitable for use in Lighting Zone 3.

Compared to the sports lighting, the parking lot lighting creates about 5% of the light and has very modest impact. However, color contrast can exacerbate the impact. At 5700K, parking lot lighting will stand out relative to the street lighting and other parking lots in the area.

The parking lot lighting design appears to meet local and energy codes provided that it is equipped with motion sensors.

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## Conclusion and Recommendations

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With respect to CEQA, artificial light at night has four potentially significant impacts:

1. It can negatively affect the natural night environment, disrupting and potentially harming the lives of many living beings, including humans;
2. It can negatively impact the aesthetics of the night environment for the enjoyment of residents, especially the beauty of the night sky, the wonder of the stars and constellations, and the pursuit of astronomy;
3. It can cause glare and other forms of light pollution that are annoying and unnecessary impacts on neighbors;
4. It can waste energy and indirectly impact carbon balance and climate.

In assessing the possible environmental impacts of artificial light at night, topography can have a significant effect. In this case, the site and surrounding area are essentially flat save modest rises and depressions associated with major collector streets, bridges and ramps, and the Folsom South canal.

The sports lighting towers will be 60 feet tall. Their daytime appearance will negatively impact the appearance of the area. However, because their appearance is reasonably compatible with the commercial and industrial character of the area, and because there are equally tall utility poles, cell towers and trees throughout the adjoining area, the impact on the daytime aesthetics will be less than significant.

The sports lighting system will have an impact on the immediate surrounding area, creating a light dome that will be noticeable and disruptive to the night environment for a radius of roughly ¼ mile, depending on topography. Because the proposed Musco system is among the best in terms of off-site impacts, and because the fields are being lighted to only 30 foot-candles, the proposed sports lighting will have the minimum possible impact of any possible sports lighting system. Moreover, this project's greatest strength in terms of mitigating light impact is the surrounding buffer zone of mixed commercial projects and associated parking lots and trees of at least ¼ mile to residential areas. In my professional opinion, few if any residences will be affected by the sports lighting, and if they are, the impact will be less than significant. There will also be impacts to the neighboring commercial properties, but commercial properties are generally compatible with light at night, making the impacts to the neighboring commercial properties less than significant.

The parking lot lighting system will operate for greater time than the sports lighting, and therefore it could negatively affect the night time appearance of the immediate area. To minimize this impact, the parking lot lighting system should be 4000K, to match local street- and parking lot lighting. The parking lot lighting will not be visible from any residences, and

because it will be consistent with existing lighting in the area, its overall impact will be less than significant.

Both lighting systems will contribute to artificial sky glow. Their contribution will be consistent with the intended and zoned uses of the area. Because the light sources are fully shielded and equipped with shut off controls, the impact of their contribution will be less than significant.

Neither lighting system will cause any meaningful amount of offsite glare, making any glare impacts less than significant.

Both lighting systems are as efficient as possible and equipped with lighting controls that will ensure minimum energy use, making the impact of energy use less than significant.

## Summary

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Although the lighting for the Complex will have several environmental impacts as defined by CEQA, in my professional opinion and with reasonable scientific certainty all of the impacts will be less than significant.





**Kilgore Soccer**  
Rancho Conejo, CA

**Lighting System**

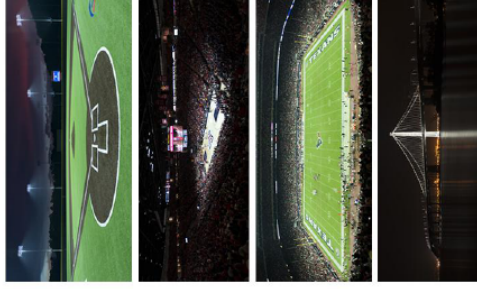
Pole / Fixture	Power	Height	Mounting	Fixture Qty	Luminaire Type	Lead	Group
S1	60'	60'	2	2	216 LED	1.10 MW	A
					228 LED	4.41 MW	A
S2	60'	60'	7	7	216 LED	1.10 MW	A
					228 LED	4.41 MW	A
S3	60'	60'	7	7	216 LED	1.10 MW	A
					228 LED	4.41 MW	A
S4	60'	60'	7	7	216 LED	1.10 MW	A
					228 LED	4.41 MW	A
S5	60'	60'	6	6	216 LED	0.60 MW	B
					228 LED	3.78 MW	B
S6	60'	60'	3	3	216 LED	1.79 MW	B
					228 LED	3.78 MW	B
S7	60'	60'	6	6	216 LED	0.60 MW	B
					228 LED	3.78 MW	B
S8	60'	60'	6	6	216 LED	0.60 MW	B
					228 LED	3.78 MW	B
					216 LED	0.60 MW	C
					228 LED	3.78 MW	C
S9	60'	60'	3	3	216 LED	1.79 MW	B
					228 LED	3.78 MW	B
					216 LED	1.79 MW	C
					228 LED	3.78 MW	C
S10	60'	60'	6	6	216 LED	0.60 MW	B
					228 LED	3.78 MW	B
					216 LED	0.60 MW	C
					228 LED	3.78 MW	C
S11	60'	60'	6	6	216 LED	0.60 MW	C
					228 LED	3.78 MW	C
S12	60'	60'	3	3	216 LED	1.79 MW	C
					228 LED	3.78 MW	C
S13	60'	60'	6	6	216 LED	0.60 MW	C
					228 LED	3.78 MW	C
<b>Σ3</b>				<b>124</b>		<b>77.83 MW</b>	

Group	Description	Lead	Fixture Qty
A	Soccer 1	20.83 MW	32
B	Soccer 2	23.65 MW	48
C	Soccer 3	23.65 MW	48

**Fixture Type Summary**

Type	Source	Wattage	Lumens	LS9	LS0	L70	L70 quantity
228 LED	LED 5700K - 75 CRI	650W	65,400	33,000	>42,000	>42,000	100
216 LED	LED 5700K - 75 CRI	597W	65,400	33,000	>42,000	>42,000	24

From Hometown to Professional



**We Make It Happen.**

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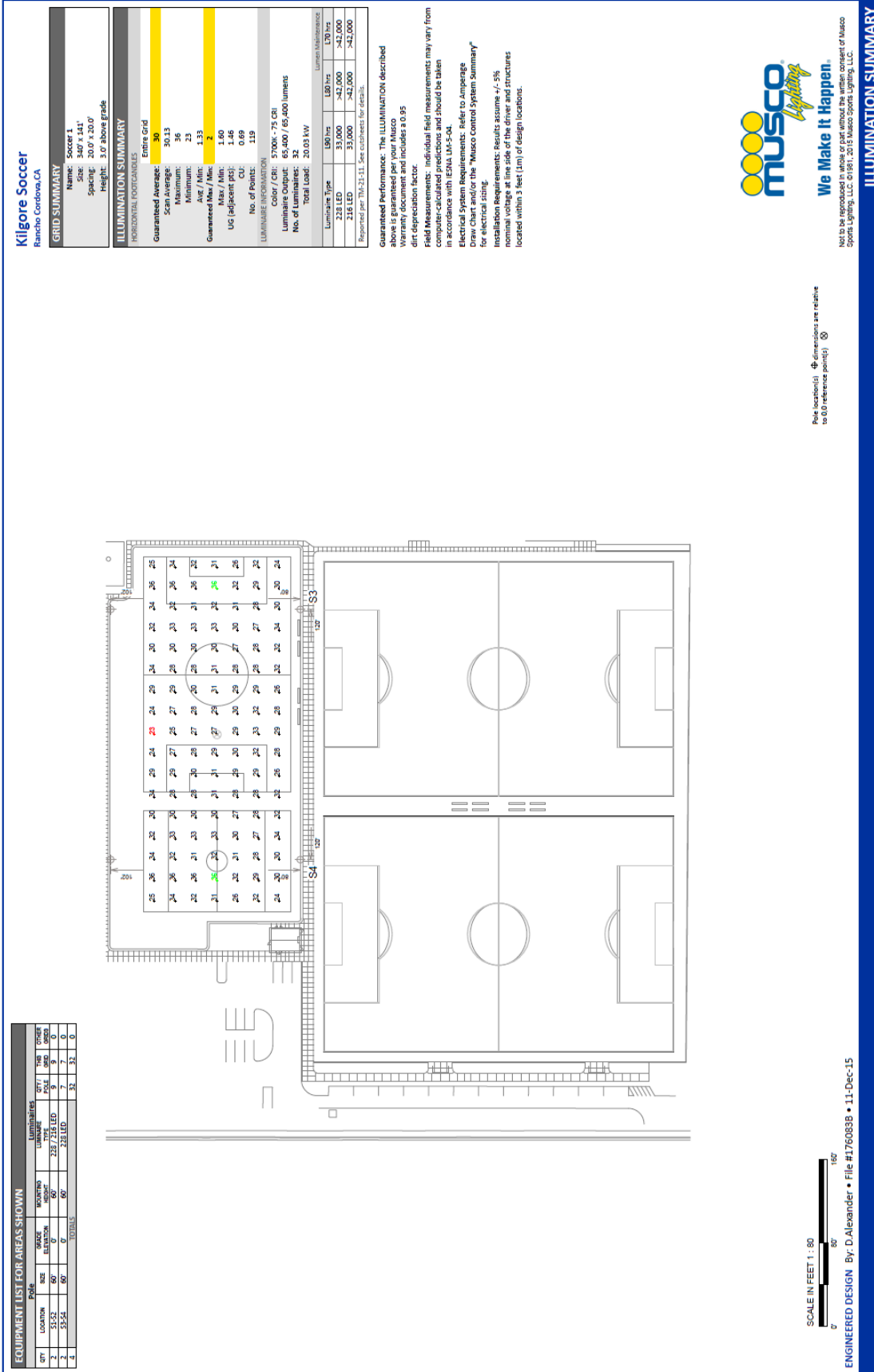
**DDA/EI/CT SUMMARY**

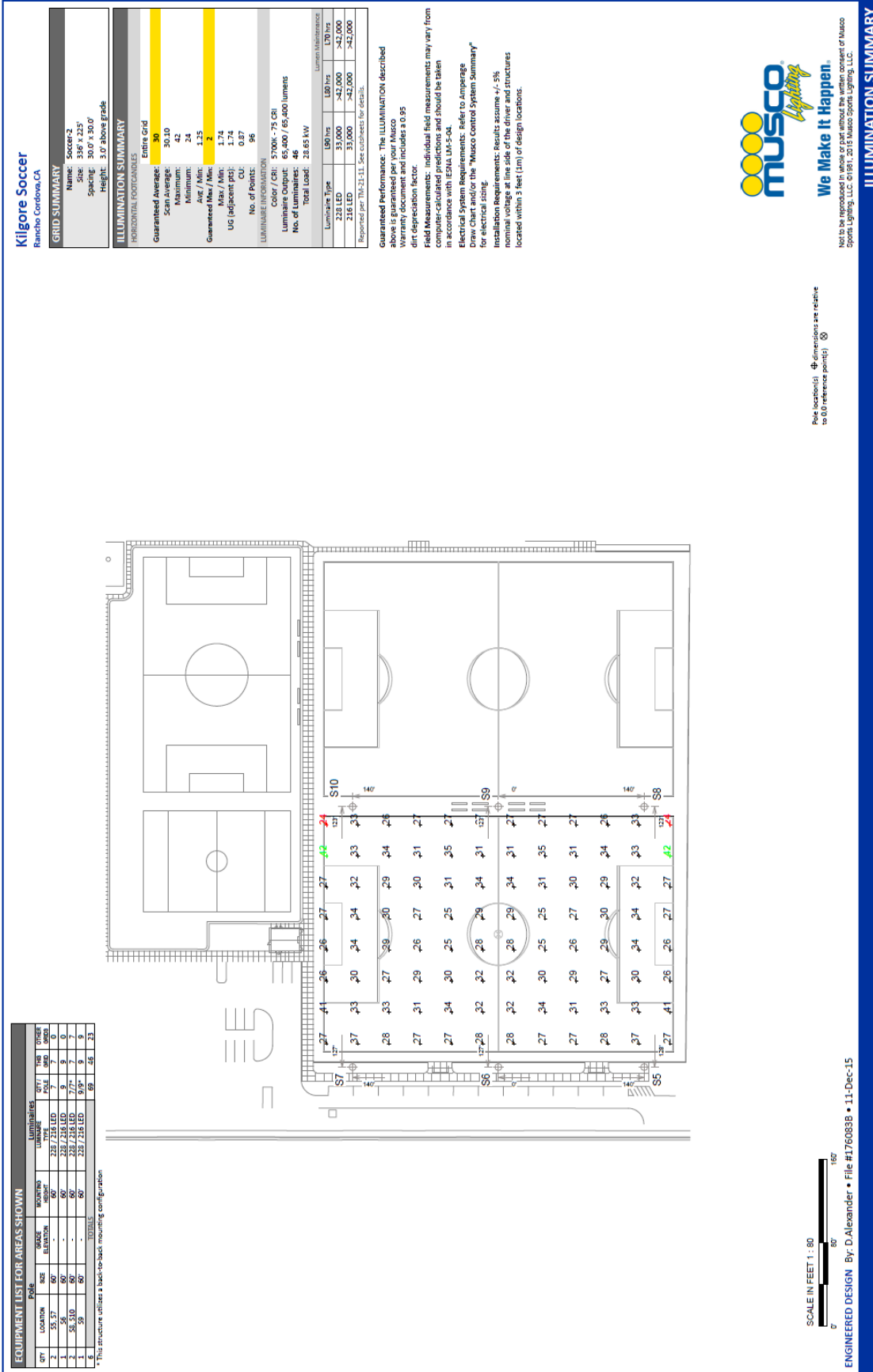
**Light Level Summary**

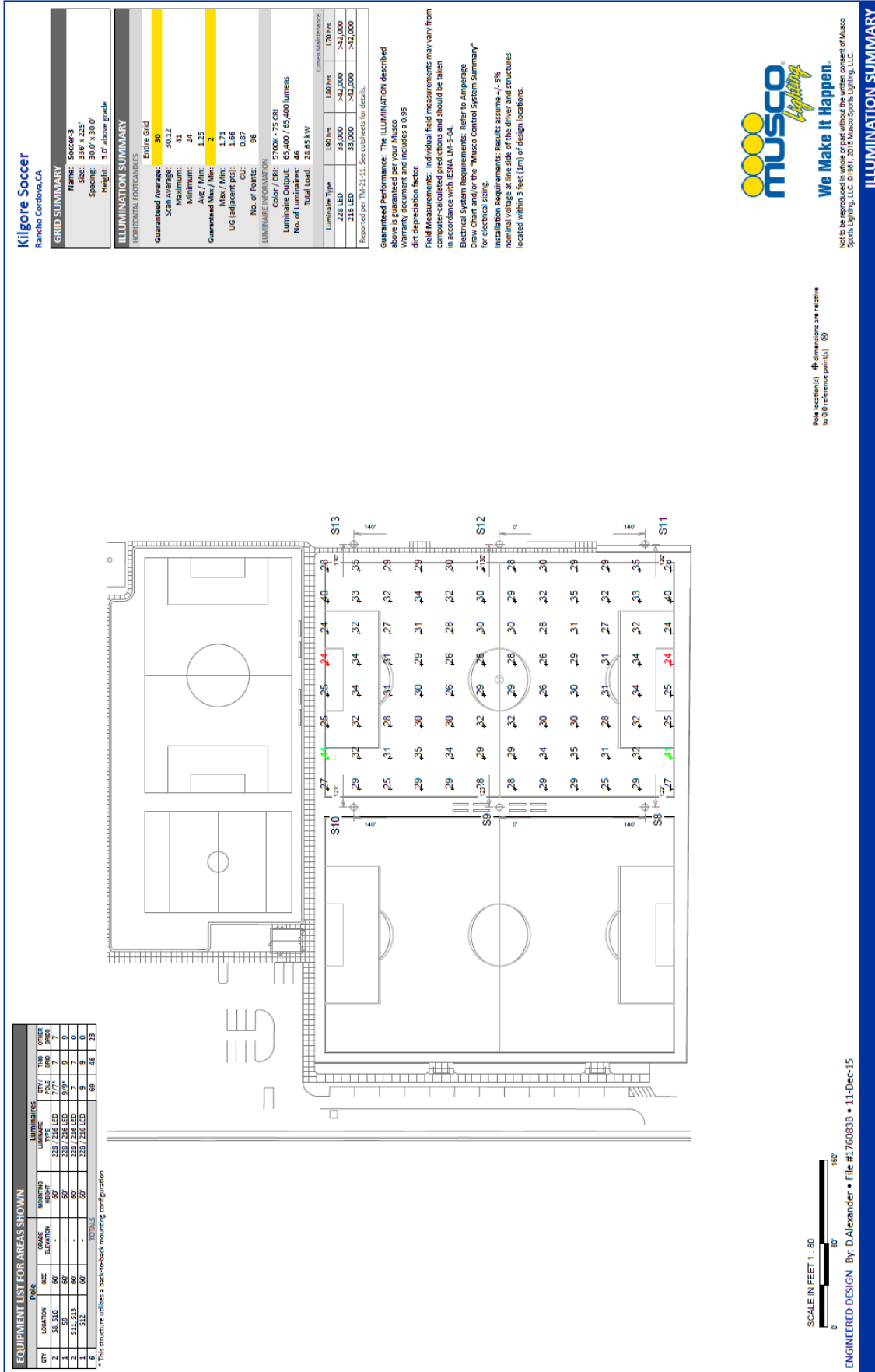
Grid Name	Calculation Metric	Zone	Min Illumination	Max Illumination	Max/Min	Groups	Fixture Qty
Soccer 1	Horizontal Illuminance	30.1	23	36	1.60	A	32
Soccer 2	Horizontal Illuminance	30.1	24	42	1.74	B	48
Soccer 3	Horizontal Illuminance	30.1	24	41	1.71	C	48
Spill - Blanket - 15'	Horizontal	0.16	0	11	0.00	A,B,C	124
Spill - Blanket - 15'	Max Vert Illuminance (by Light Bank)	0.30	0	20	0.00	A,B,C	124
Spill - Blanket - 25'	Horizontal	0.09	0	16	0.00	A,B,C	124
Spill - Blanket - 25'	Max Vert Illuminance (by Light Bank)	0.17	0	17	0.00	A,B,C	124
Spill - Blanket - 30'	Horizontal	0.05	0	29	0.00	A,B,C	124
Spill - Blanket - 30'	Max Vert Illuminance (by Light Bank)	0.09	0	27	0.00	A,B,C	124
Spill - Blanket - 5'	Horizontal	0.27	0	20	0.00	A,B,C	124
Spill - Blanket - 5'	Max Vert Illuminance (by Light Bank)	0.46	0	29	0.00	A,B,C	124
Spill - Road - 15'	Horizontal	0	0	0.05	0.00	A,B,C	124
Spill - Road - 15'	Max Vert Illuminance (by Light Bank)	0.03	0	0.35	0.00	A,B,C	124
Spill - Road - 25'	Horizontal	0	0	0.01	0.00	A,B,C	124
Spill - Road - 25'	Max Vert Illuminance (by Light Bank)	0.01	0	0.08	0.00	A,B,C	124
Spill - Road - 35'	Horizontal	0	0	0	0.00	A,B,C	124
Spill - Road - 35'	Max Vert Illuminance (by Light Bank)	0	0	0	0.00	A,B,C	124
Spill - Road - 5'	Horizontal	0.01	0	0.12	0.00	A,B,C	124
Spill - Road - 5'	Max Vert Illuminance (by Light Bank)	0.07	0	0.68	0.00	A,B,C	124

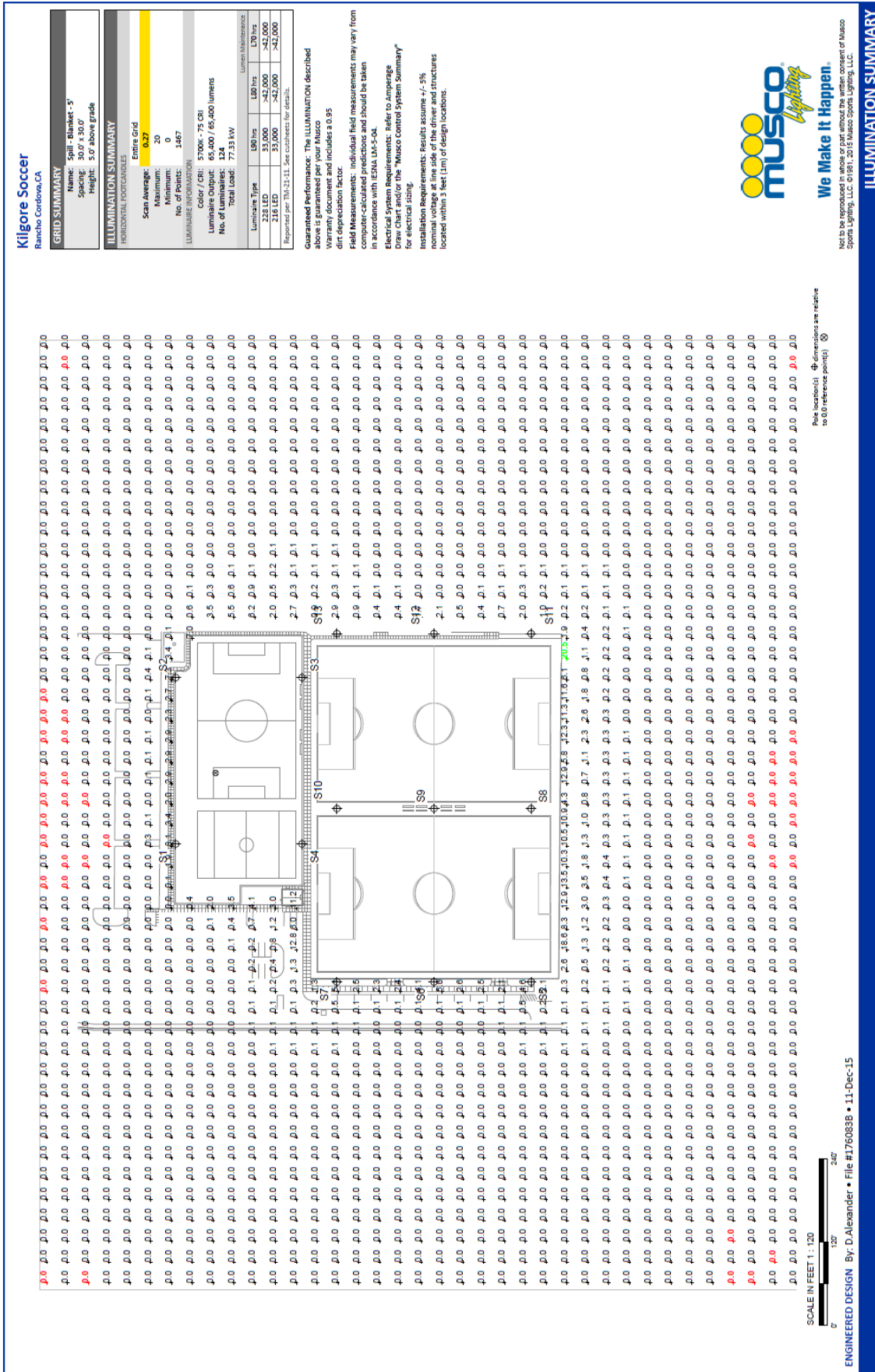
ENGINEERED DESIGN By: D.Alexander • File #176083B • 11-Dec-15

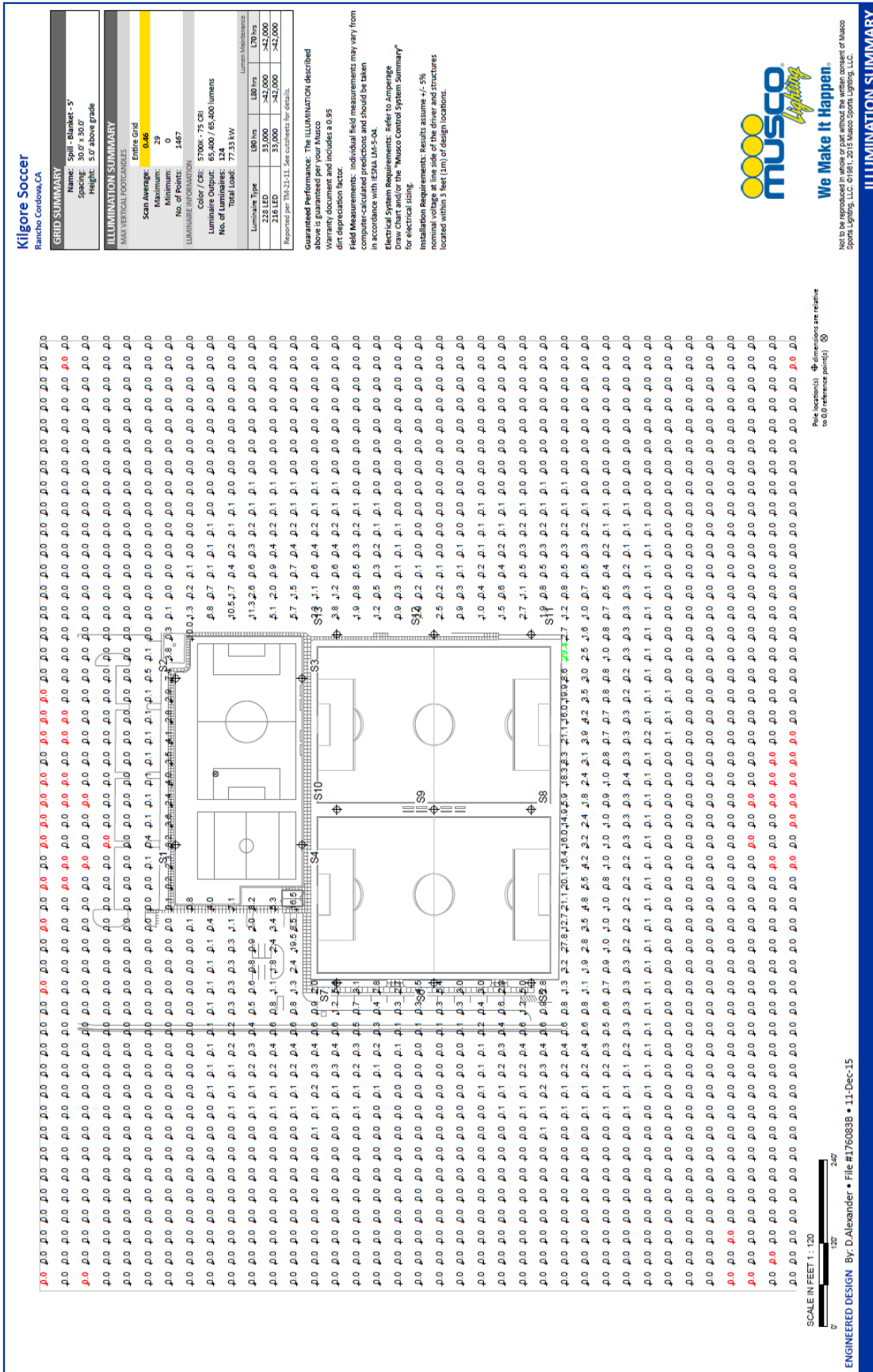
**Exhibit "A" – Musco Calculations Submitted for the Purposes of the Environmental Impact Assessment**

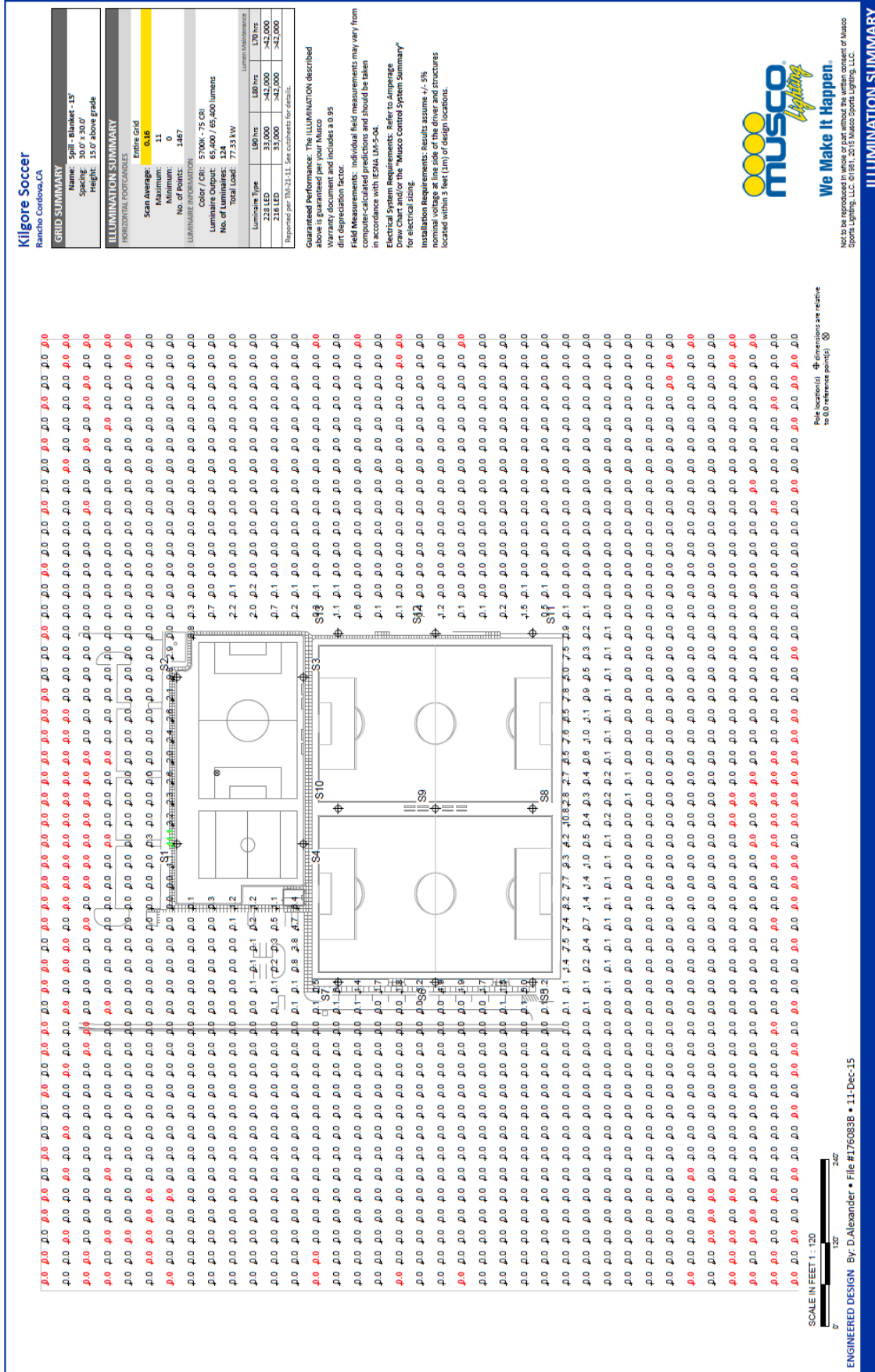


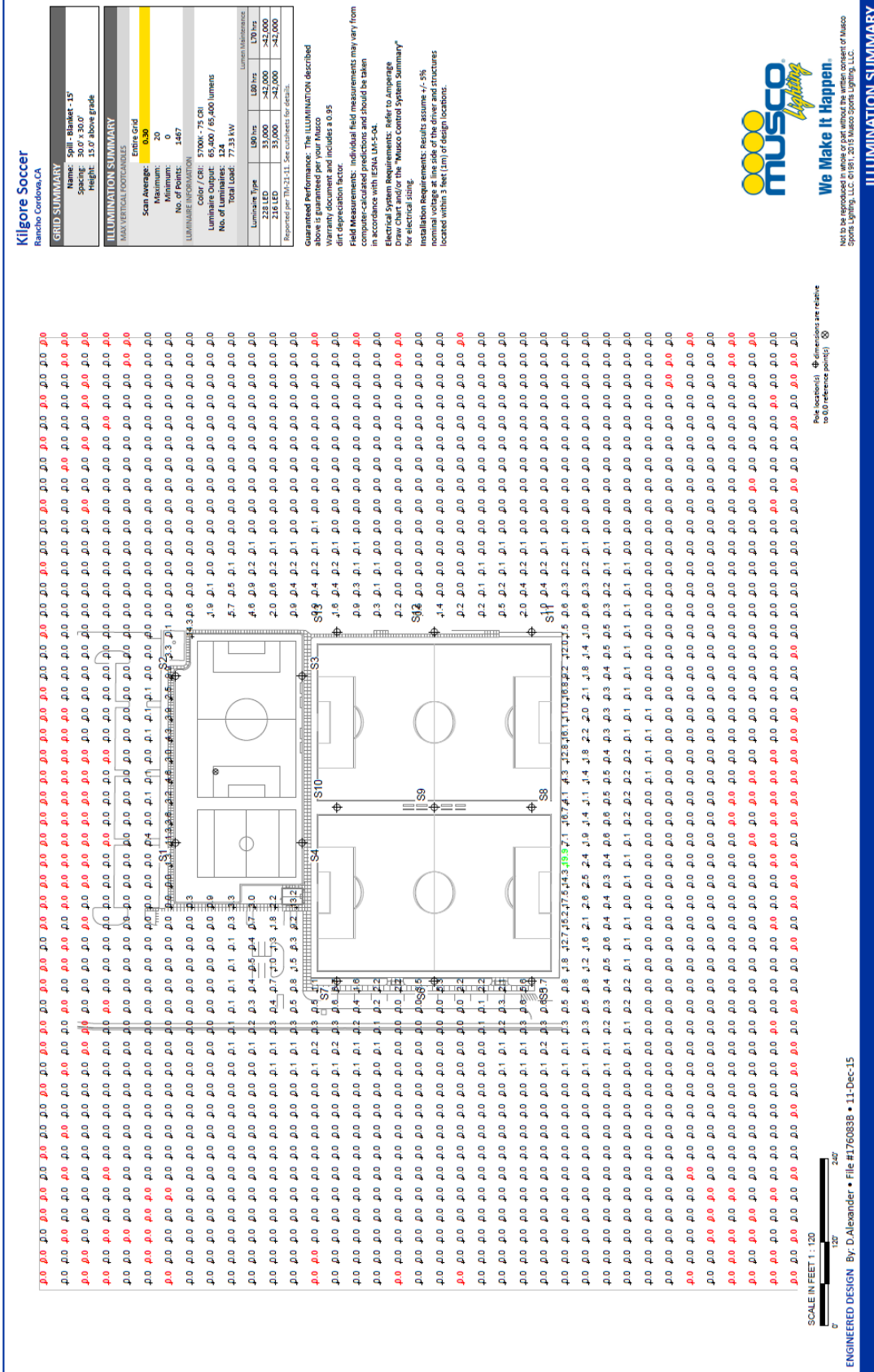




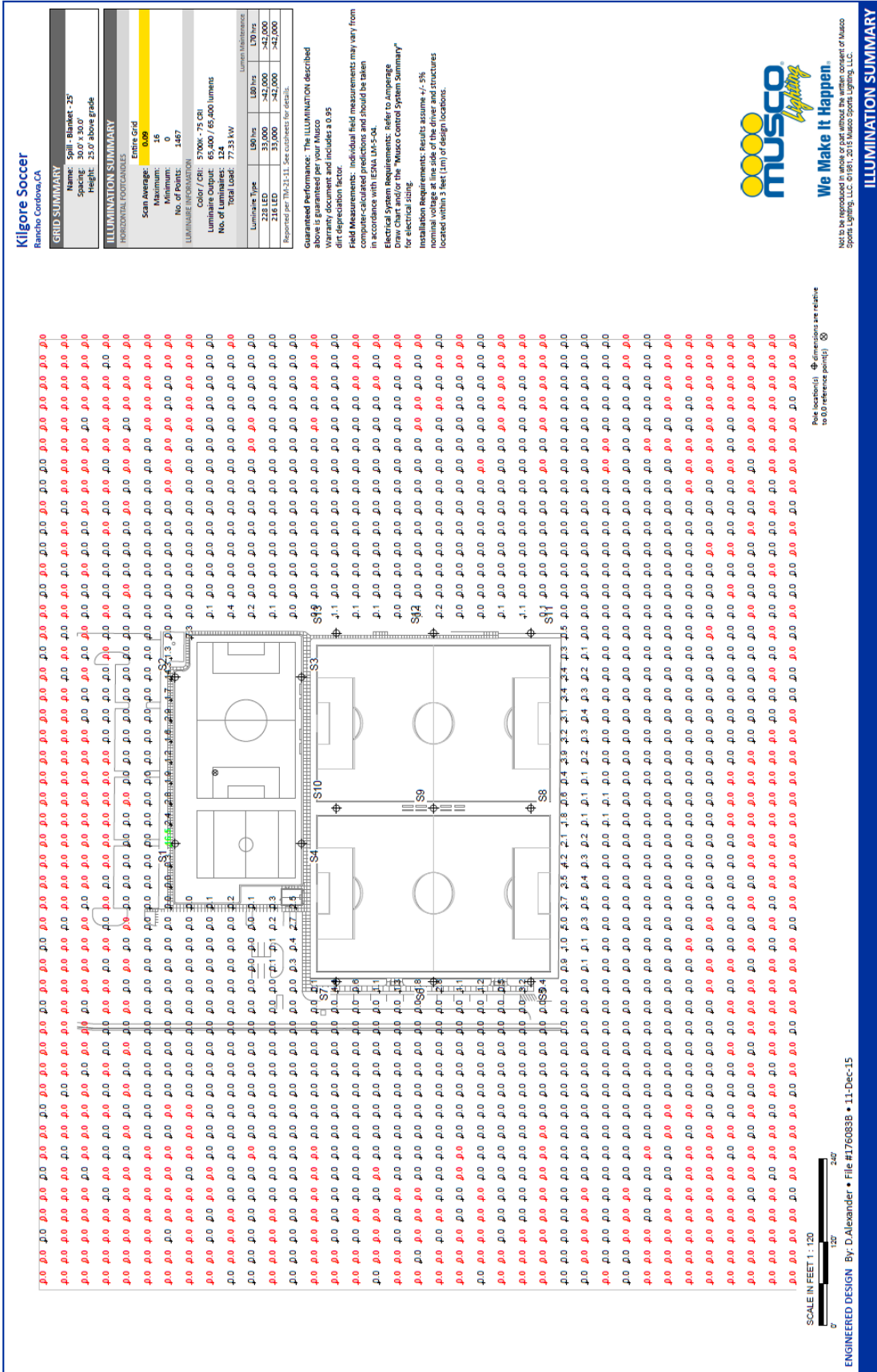












**Kilgore Soccer**  
Rancho Cordova, CA

**GRID SUMMARY**

Name: Spill - Blanket - 25'  
Spacing: 30.0' x 30.0'  
Height: 25.0' above grade

**LUMINATION SUMMARY**

MAX VERTICAL FOOTCANDLES

Entire Grid: 0.37

Scan Average: 0.37  
Maximum: 17  
Minimum: 0

No. of Points: 1487

**LUMINAIRE DATA**

Color / CRI: 5700K - 75 CRI  
Luminaire Output: 65,400 / 65,400 lumens  
No. of Luminaires: 124  
Total Load: 77.33 kW

Luminaire Type	150 hrs	120 hrs	L70 hrs
218 ED	33,000	33,000	33,000
218 ED	41,400	41,400	41,400
	74,400	74,400	74,400

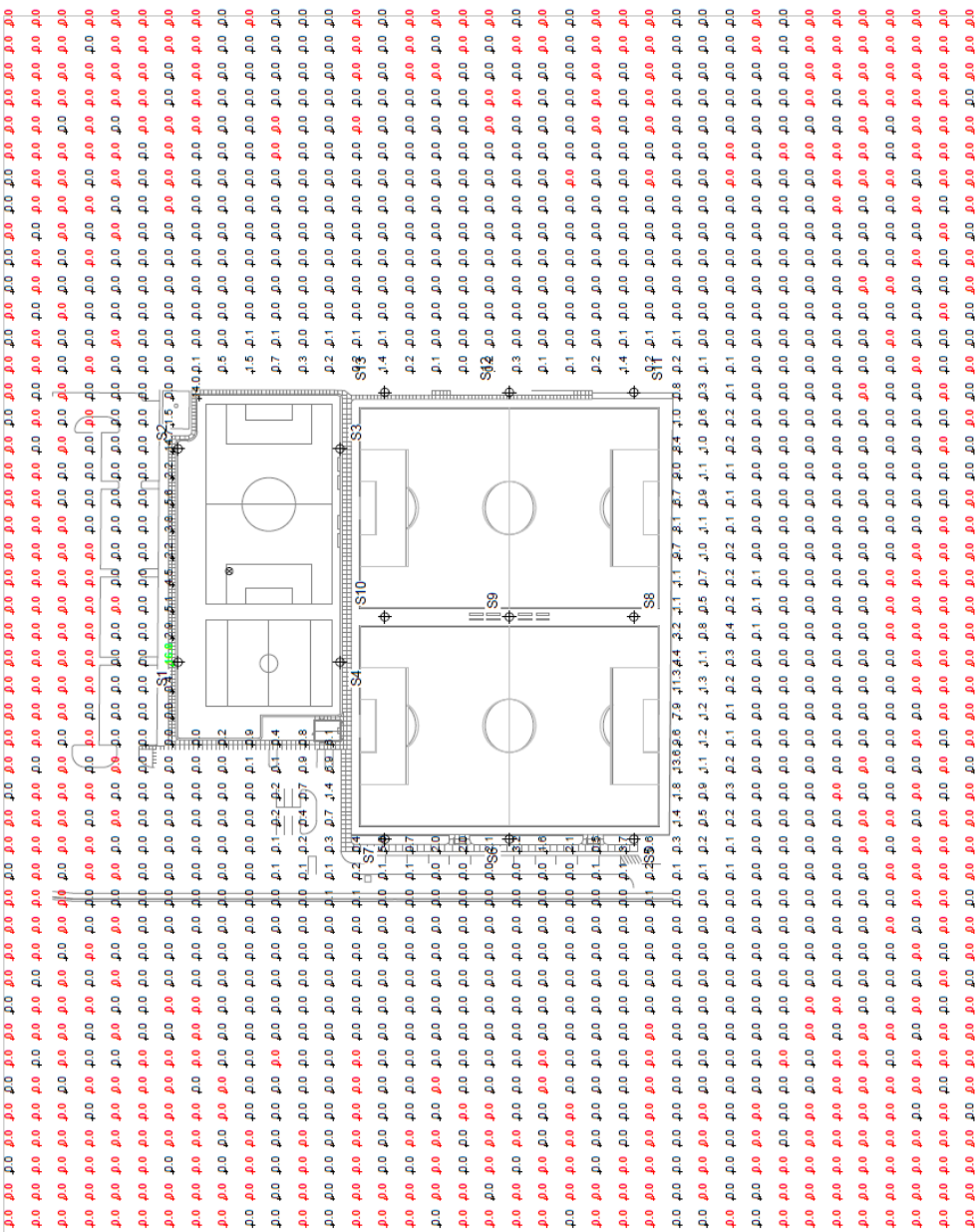
Reported per TM-21-11. See cut sheets for details.

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco warranty document and includes a 0.95 dirt depreciation factor.

**Field Measurements:** Individual field measurements may vary from the overall average. Field measurements should be taken in accordance with IESNA LM-79-07.

**Electrical System Requirements:** Refer to Appendix Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

**Installation Requirements:** Results assume +/- 5% nominal voltage at line side of the driver and structures located within 3 feet (3m) of design locations.



SCALE IN FEET 1:130  
0' 100' 200'

Point location(s)  $\Phi$  dimensions are relative to (0,0 reference point(s))

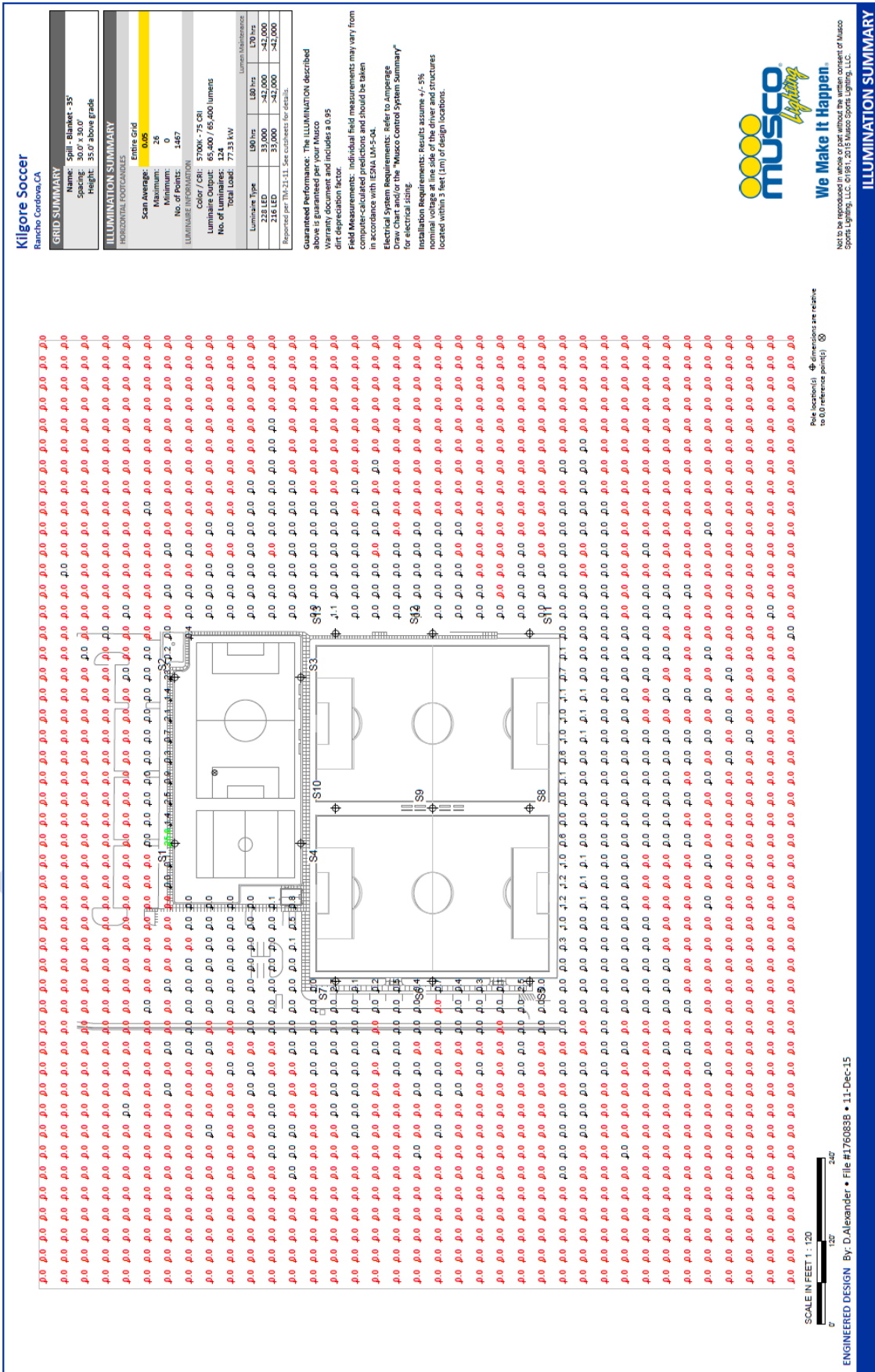
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**ILLUMINATION SUMMARY**



**Kilgore Soccer**  
 Rancho Cordova, CA

**GRID SUMMARY**

Name: Spill - Blanket - 35'  
 Spacing: 30.0' x 30.0'  
 Height: 35.0' above grade

**ILLUMINATION SUMMARY**

**PERFORMANCE CHARACTERISTICS**

Beam Angle: 0.05  
 Beam Spread: 26  
 Minimum: 0  
 No. of Points: 1467

**LUMINAIRE INFORMATION**

Color / CRI: 5700K - 75 CRI  
 Luminaire Output: 65,000 / 65,000 lumens  
 No. of Fixtures: 1467  
 Total Load: 77.33 kW

Luminaire Type	L80 hrs	L90 hrs	L70 hrs
218 LED	33,000	35,000	42,000
218 LED	33,000	35,000	42,000

**Guaranteed Performance:** The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA LM-79-04.

**Electrical System Requirements:** Refer to Ampenage and the "Musco Control System Summary" for electrical sizing.

**Installation Requirements:** Results assume +/- 5% nominal voltage at the side of the driver and structures located within 3 feet (1m) of design locations.



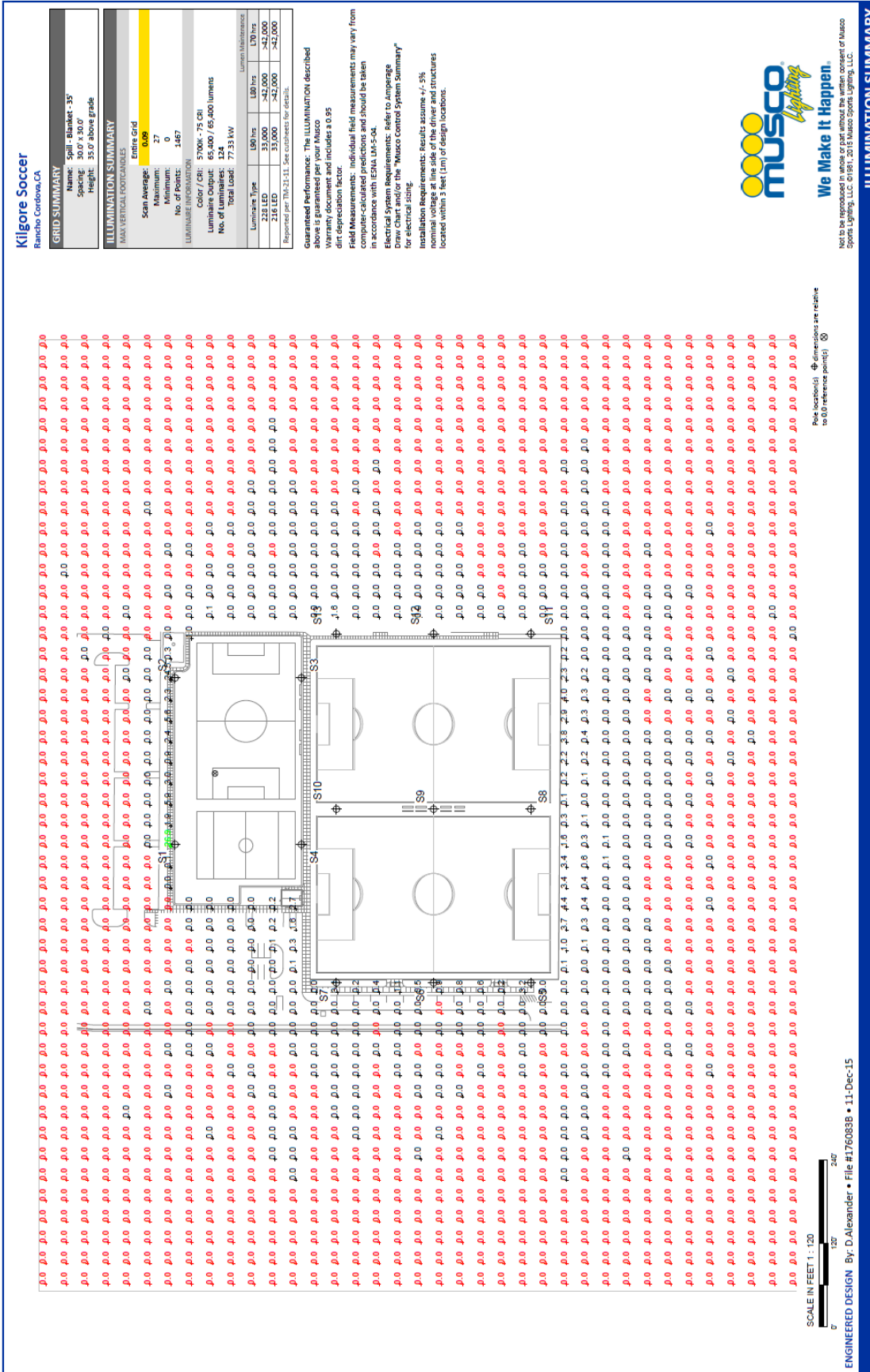
**ILLUMINATION SUMMARY**

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Point locations (± dimensions are relative to 0.0 reference point(s))

SCALE IN FEET 1: 120  
 0' 120' 240'

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### Kilgore Soccer

Rancho Cordova, CA

GRID SUMMARY	
Name:	Spill - Road - 5'
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY	
HORIZONTAL FOOTCANDLES	
Scan Average:	0.0129
Maximum:	0.13
Minimum:	0.00
No. of Points:	23

**LUMINAIRE INFORMATION**

Color / CRI: 5700K - 75 CRI  
 Luminaire Output: 65,400 / 65,400 lumens  
 No. of Luminaires: 124  
 Total Load: 77.33 kW

Luminaire Type	180°/hr	180°/hr	170°/hr
238 LED	33,000	-42,000	-42,000
216 LED	33,000	-42,000	-42,000

Reported per IESNA-21-11. See cutsheets for details.

**Guaranteed Performance:** The ILLUMINATION described herein is guaranteed to meet the minimum performance requirements specified in the project's Warrant documents and includes a 0.95 dirt depreciation factor.

**Field Measurements:** Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA LM-5-04.

**Electrical System Requirements:** Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

**Installation Requirements:** Results assume +/- 5% nominal voltage at line side of the driver and structures located within 3 feet (3m) of design locations.

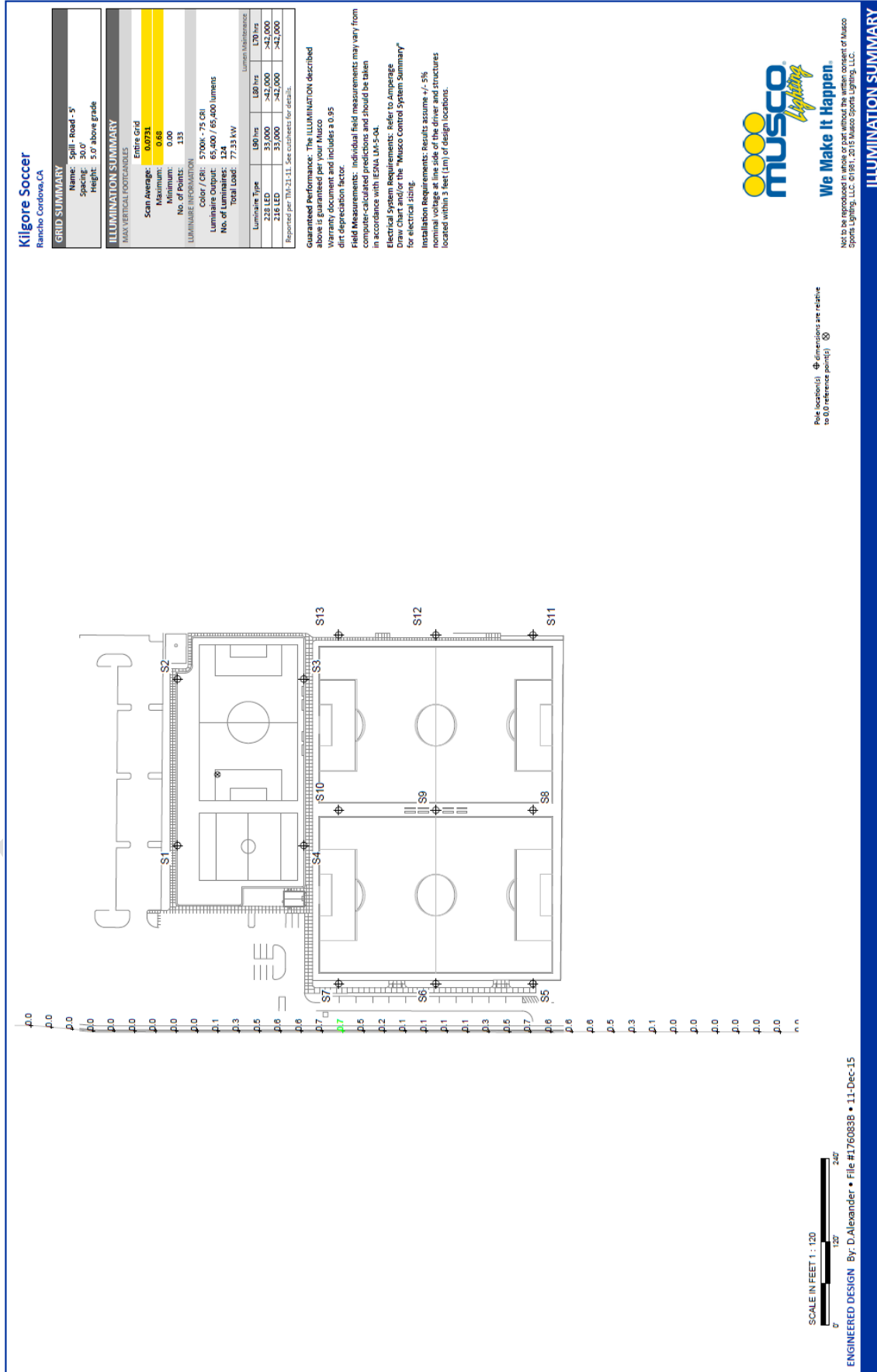
SCALE IN FEET 1" = 120'

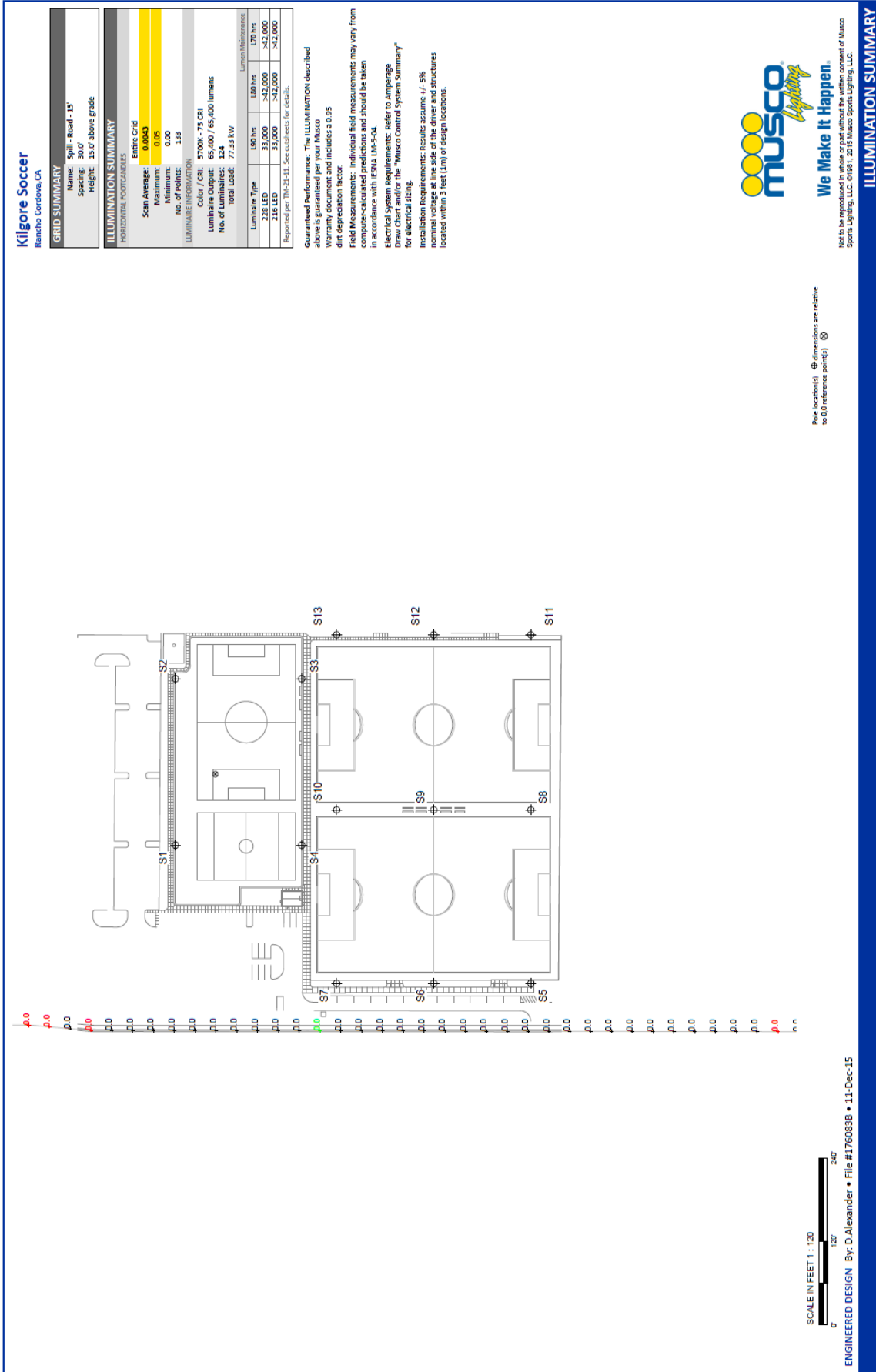
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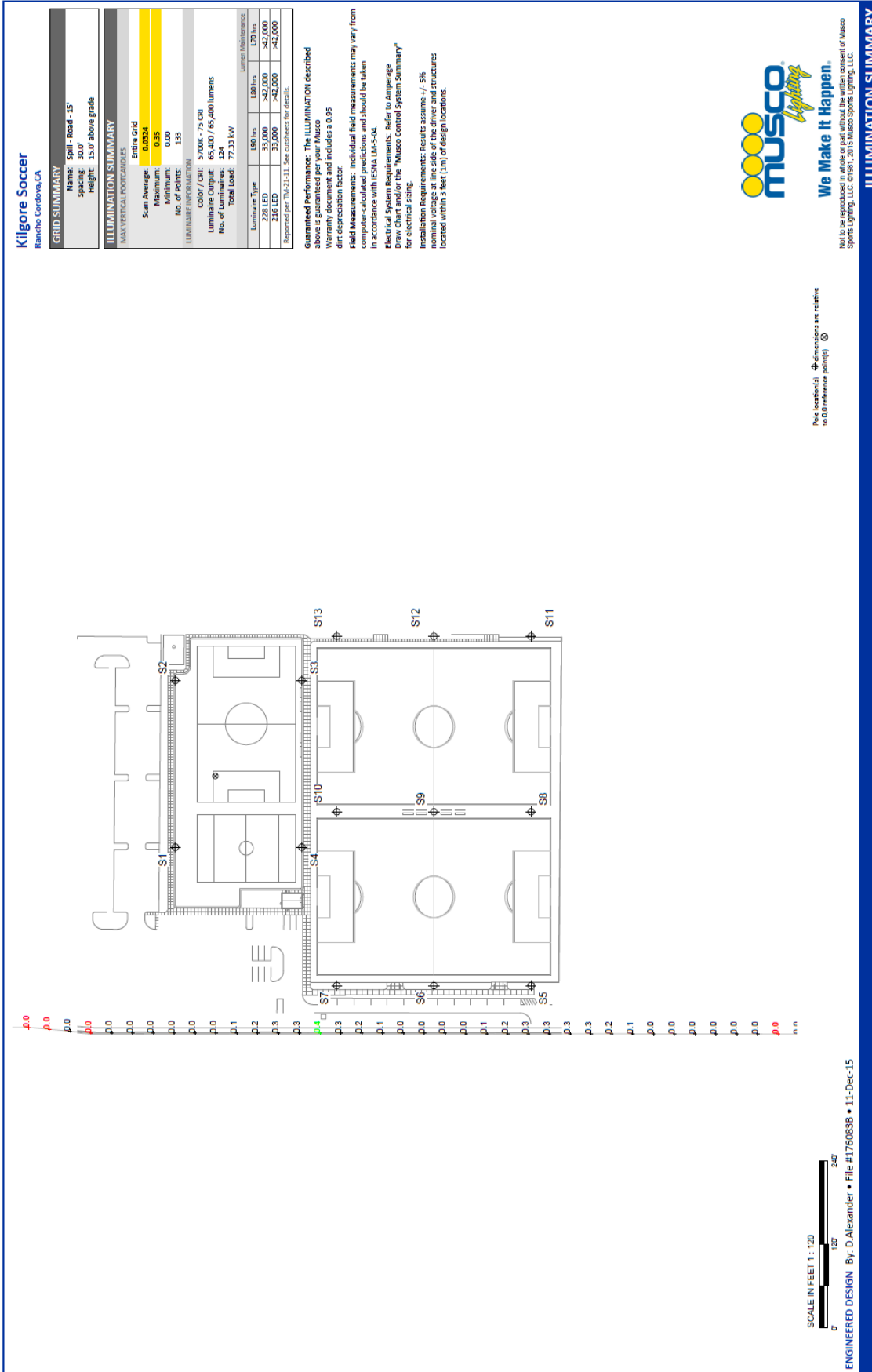
Pole location(s)    ⊕    dimensions are relative to 0.0' reference point(s)    ⊗

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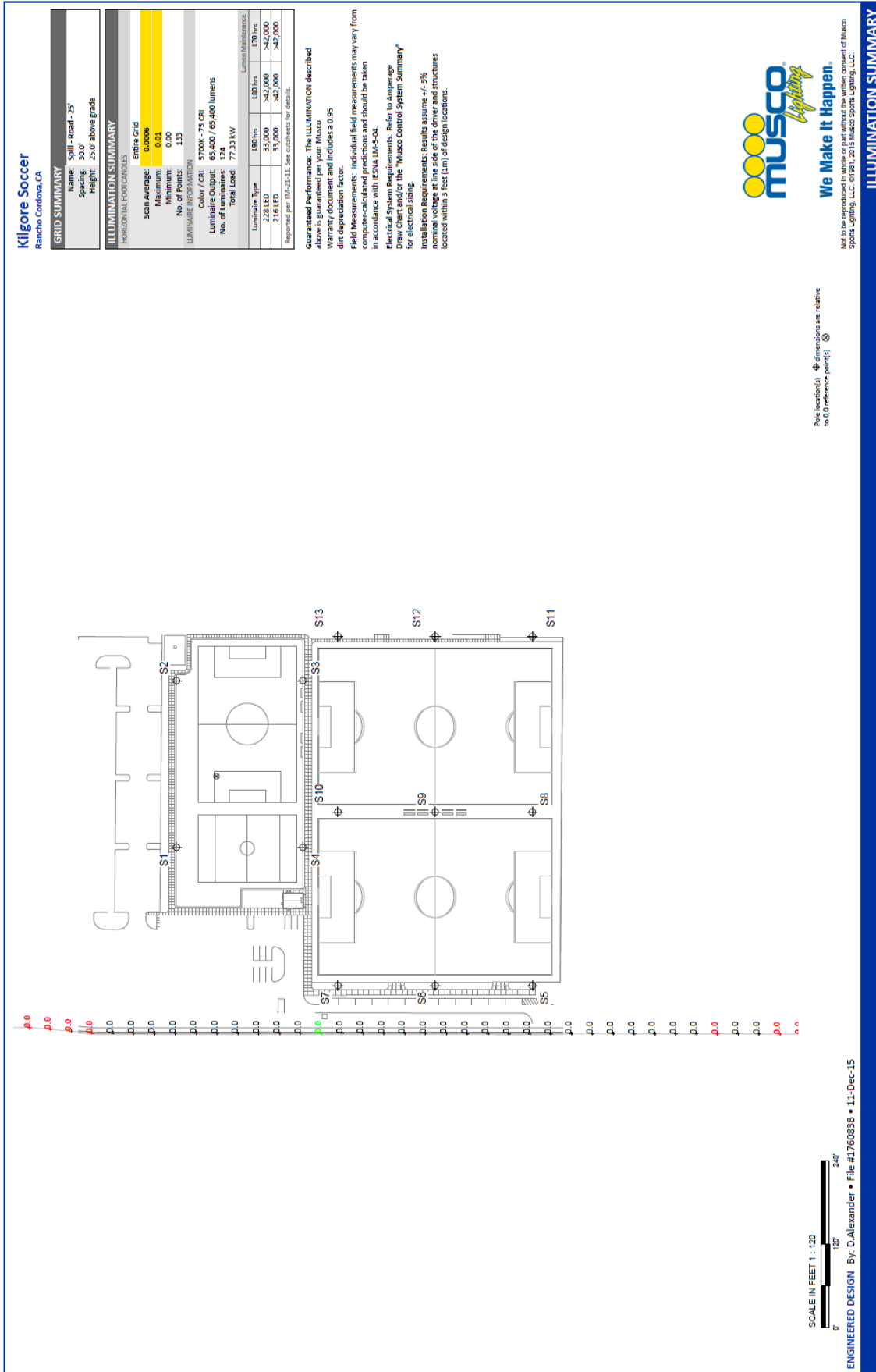
ILLUMINATION SUMMARY

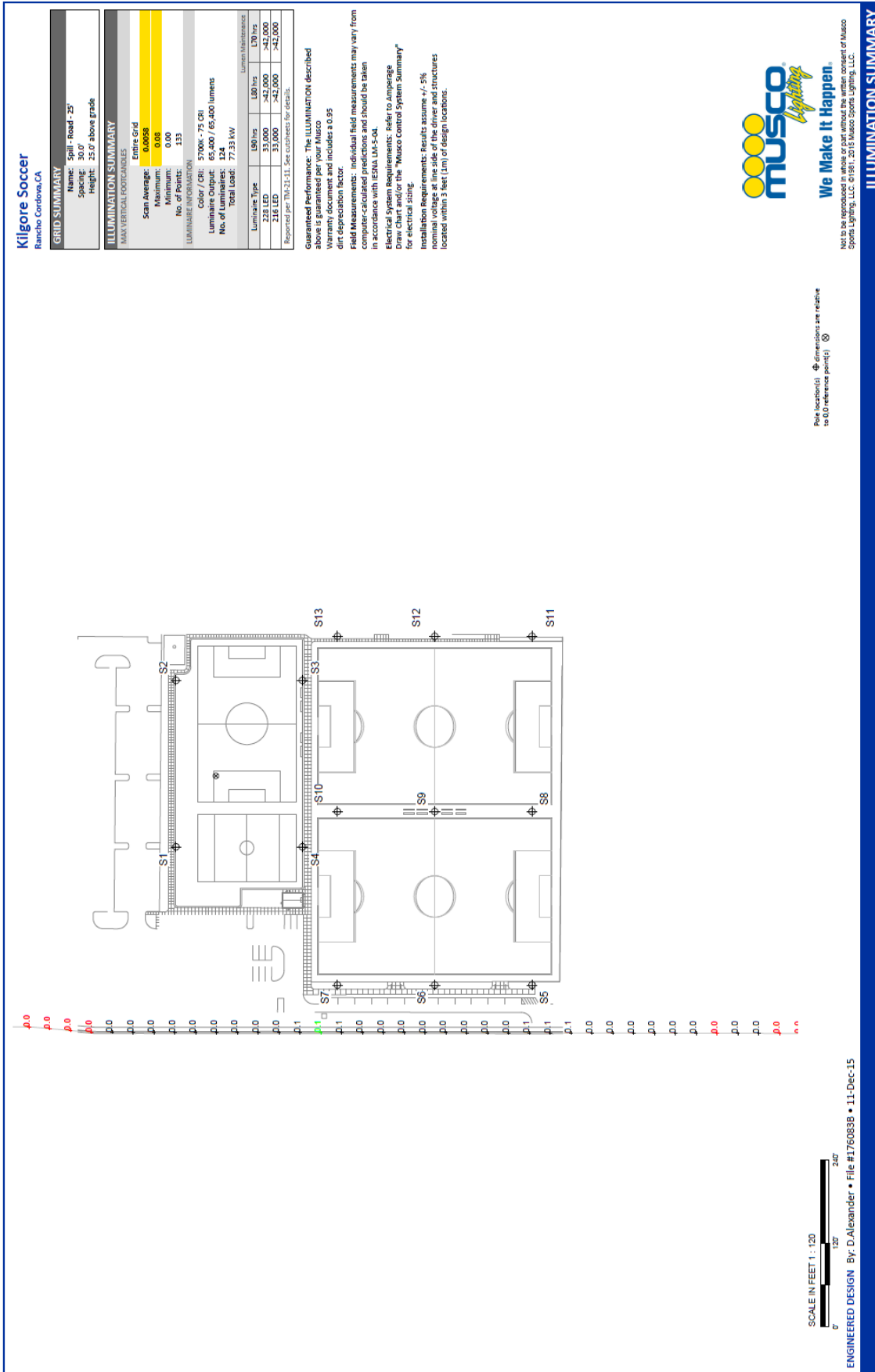












### Kilgore Soccer

Rancho Cordova, CA

**GRID SUMMARY**

Name: Spill - Road - 35'

Spacing: 30.0'

Height: 35.0' above grade

**ILLUMINATION SUMMARY**

Horizontal Footcandles

Entire Grid

Scale Average: 0.00

Maximum: 0.00

Minimum: 0.00

No. of Points: 133

**LUMINAIRE INFORMATION**

Color / CRI: 5700K - 75 CRI

Luminaire Output: 65,400 / 65,400 lumens

No. of Luminaires: 133

Total Load: 77.33 kW

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
216 LED	33,000	>42,000	>42,000
216 LED	33,000	>42,000	>42,000

Reported per TM-21-11. See cutsheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA LM-5-04.

Electrical System Requirements: Refer to Ampage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume +/- 5% manufacturing tolerances. Structures located within a feet (3m) of design locations.

Pole location(s) ⊕ dimensions are relative to 0.0 reference point(s) ⊗

SCALE IN FEET 1: 120

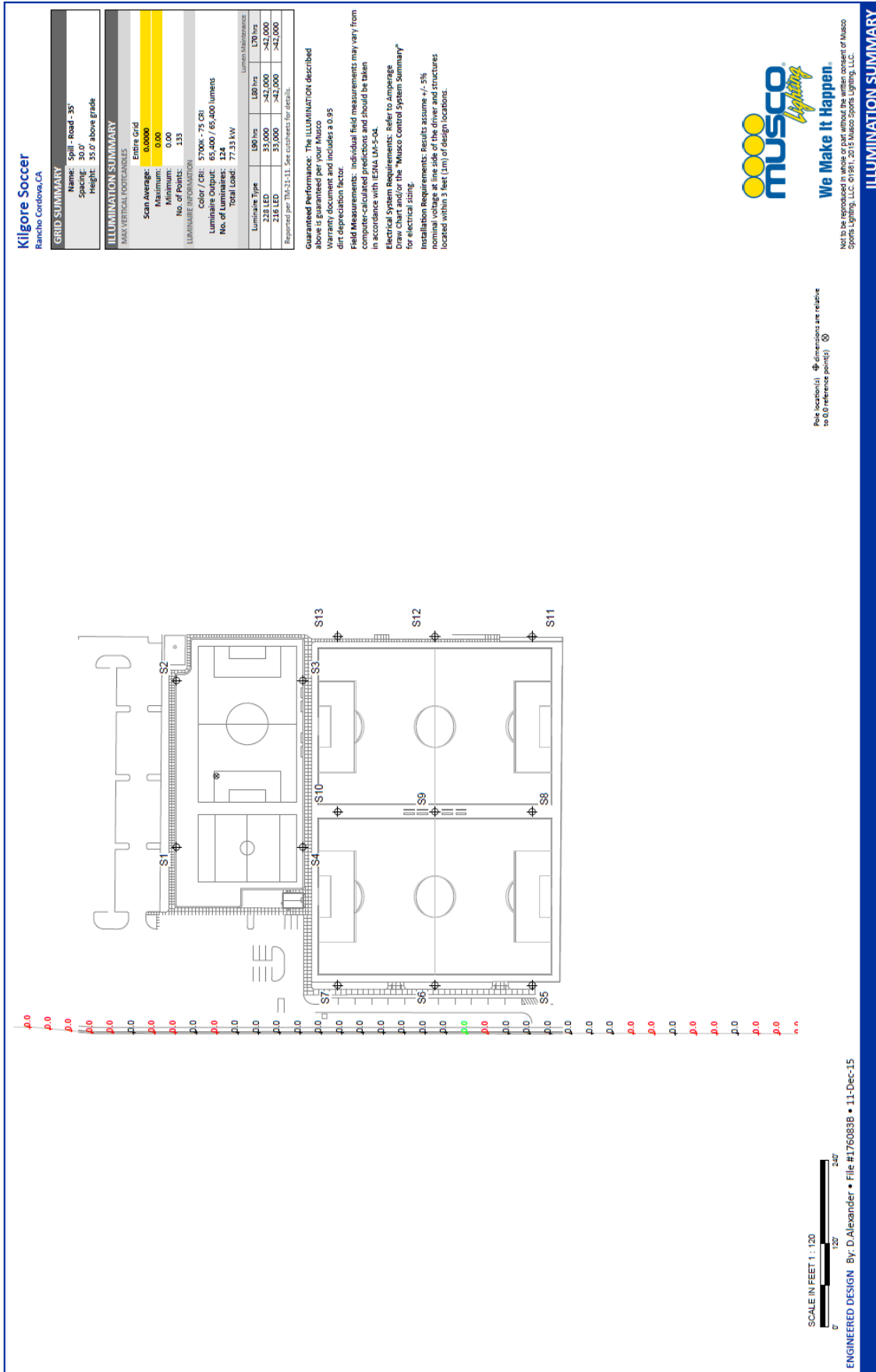
0 60 120 180 240

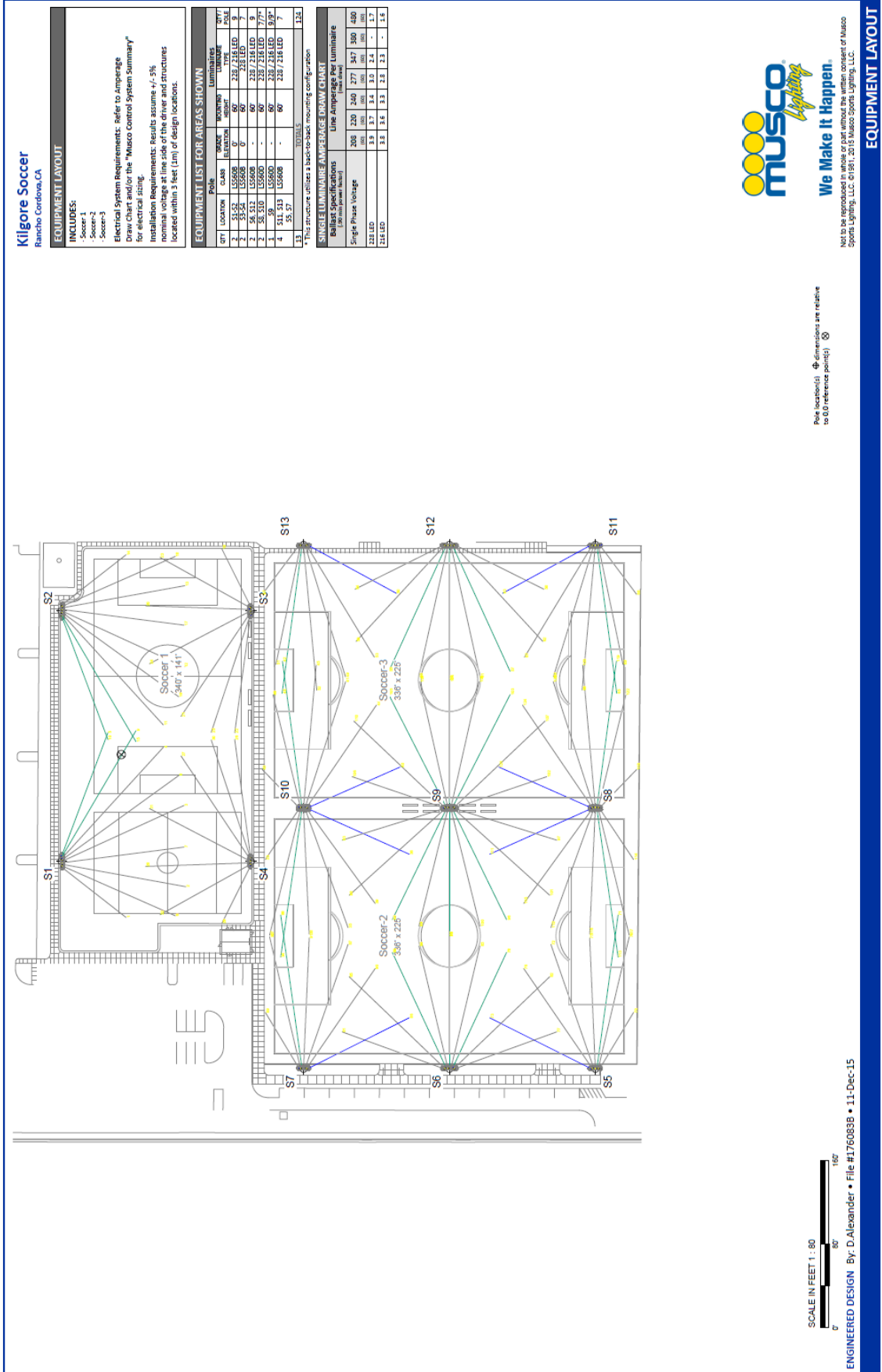
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**ILLUMINATION SUMMARY**





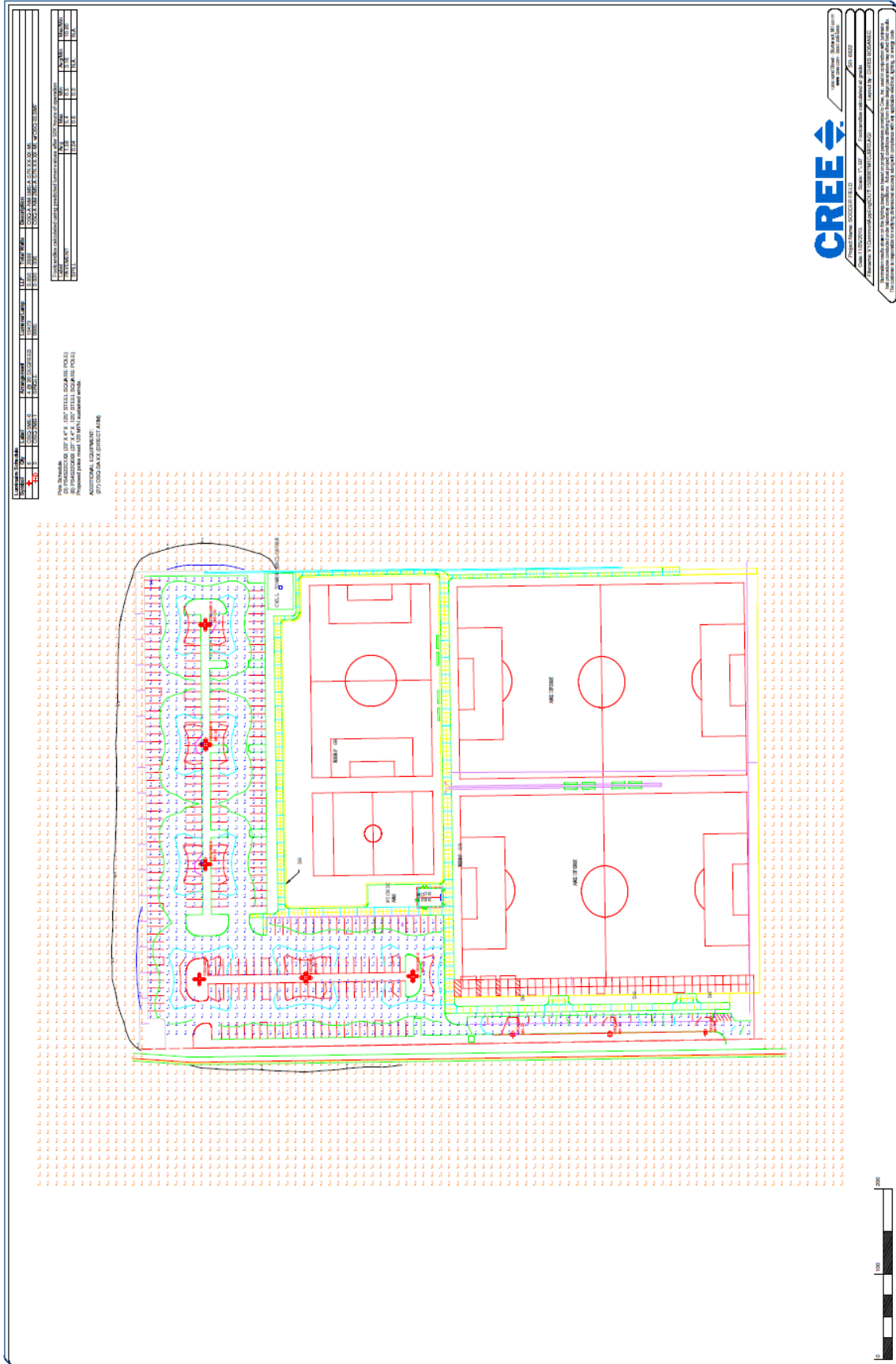


Exhibit "B" - Cree Calculations Submitted for the Purposes of the Environmental Impact Assessment

## **APPENDIX C – AIR QUALITY**





Kilgore Soccer Fields - Sacramento County, Summer

**Kilgore Soccer Fields**  
**Sacramento County, Summer**

**1.0 Project Characteristics**

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**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	313.00	Space	2.82	125,200.00	0
City Park	7.36	Acre	7.36	320,601.60	0
Other Non-Asphalt Surfaces	0.58	Acre	0.58	25,264.80	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	3.5	<b>Precipitation Freq (Days)</b>	58
<b>Climate Zone</b>	6			<b>Operational Year</b>	2018
<b>Utility Company</b>	Sacramento Municipal Utility District				
<b>CO2 Intensity (lb/MWhr)</b>	590.31	<b>CH4 Intensity (lb/MWhr)</b>	0.029	<b>N2O Intensity (lb/MWhr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Kilgore Soccer Fields - Sacramento County, Summer

Project Characteristics - Kilgore

Land Use - 3.4 acres of pavement

Construction Phase - Construction anticipated to last 3 months

Off-road Equipment - Construction equipment derived from Project Description

Off-road Equipment - Construction equipment derived from Project Description

Off-road Equipment - Construction equipment derived from Project Description

Off-road Equipment - Construction equipment derived from Project Description

Grading -

Vehicle Trips - Trip generation based .

Energy Use - Energy use accounts for proposed parking lot and field lights. Kilowatt data derived from Lighting and Photometrics sheet

Water And Wastewater - Water use derived from Project Description

Operational Off-Road Equipment - glitch

Fleet Mix - No Heavy-Heavy Duty Trucks anticipated

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	150
tblAreaCoating	Area_EF_Nonresidential_Interior	100	150
tblAreaCoating	Area_EF_Parking	100	0
tblConstructionPhase	NumDays	300.00	40.00
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	PhaseEndDate	1/19/2018	11/24/2017
tblConstructionPhase	PhaseStartDate	11/25/2017	9/30/2017
tblEnergyUse	LightingElect	0.00	0.29
tblEnergyUse	LightingElect	0.88	1.00
tblFleetMix	HHD	0.02	0.00
tblFleetMix	LDA	0.54	0.56
tblOffRoadEquipment	OffRoadEquipmentType		Rollers

Kilgore Soccer Fields - Sacramento County, Summer

tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Surfacing Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblVehicleTrips	ST_TR	22.75	313.04
tblVehicleTrips	WD_TR	1.89	173.64
tblWater	OutdoorWaterUseRate	8,769,302.73	651,703.00

**2.0 Emissions Summary**



Kilgore Soccer Fields - Sacramento County, Summer

**2.2 Overall Operational**

**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0730	3.1000e-004	0.0332	0.0000		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		0.0702	0.0702	1.9000e-004		0.0751
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	5.8898	9.5093	53.6792	0.1133	9.0012	0.1336	9.1348	2.4066	0.1257	2.5324		11,352.1051	11,352.1051	0.6060		11,367.2551
<b>Total</b>	<b>5.9628</b>	<b>9.5096</b>	<b>53.7124</b>	<b>0.1133</b>	<b>9.0012</b>	<b>0.1337</b>	<b>9.1350</b>	<b>2.4066</b>	<b>0.1259</b>	<b>2.5325</b>		<b>11,352.1753</b>	<b>11,352.1753</b>	<b>0.6062</b>	<b>0.0000</b>	<b>11,367.3302</b>

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0730	3.1000e-004	0.0332	0.0000		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		0.0702	0.0702	1.9000e-004		0.0751
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	5.8898	9.5093	53.6792	0.1133	9.0012	0.1336	9.1348	2.4066	0.1257	2.5324		11,352.1051	11,352.1051	0.6060		11,367.2551
<b>Total</b>	<b>5.9628</b>	<b>9.5096</b>	<b>53.7124</b>	<b>0.1133</b>	<b>9.0012</b>	<b>0.1337</b>	<b>9.1350</b>	<b>2.4066</b>	<b>0.1259</b>	<b>2.5325</b>		<b>11,352.1753</b>	<b>11,352.1753</b>	<b>0.6062</b>	<b>0.0000</b>	<b>11,367.3302</b>

## Kilgore Soccer Fields - Sacramento County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

---

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/7/2017	8/18/2017	5	10	
2	Grading	Grading	8/19/2017	9/29/2017	5	30	
3	Building Construction	Building Construction	9/30/2017	11/24/2017	5	40	
4	Paving	Paving	9/30/2017	11/24/2017	5	40	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 60

Acres of Paving: 3.4

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Kilgore Soccer Fields - Sacramento County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	2	8.00	187	0.41
Grading	Rollers	1	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Scrapers	1	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Trenchers	1	8.00	78	0.50
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Rough Terrain Forklifts	1	8.00	100	0.40
Building Construction	Rubber Tired Dozers	2	8.00	247	0.40
Building Construction	Rubber Tired Loaders	1	8.00	203	0.36
Building Construction	Skid Steer Loaders	1	8.00	65	0.37
Building Construction	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Trenchers	1	8.00	78	0.50
Building Construction	Welders	0	8.00	46	0.45
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Surfacing Equipment	1	8.00	263	0.30
Paving	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Kilgore Soccer Fields - Sacramento County, Summer

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	4	10.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	198.00	77.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	4	10.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

**3.2 Site Preparation - 2017**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					12.0442	0.0000	12.0442	6.6205	0.0000	6.6205			0.0000			0.0000
Off-Road	3.0960	32.8210	14.0410	0.0233		1.7664	1.7664		1.6251	1.6251		2,384.4567	2,384.4567	0.7306		2,402.7216
<b>Total</b>	<b>3.0960</b>	<b>32.8210</b>	<b>14.0410</b>	<b>0.0233</b>	<b>12.0442</b>	<b>1.7664</b>	<b>13.8106</b>	<b>6.6205</b>	<b>1.6251</b>	<b>8.2456</b>		<b>2,384.4567</b>	<b>2,384.4567</b>	<b>0.7306</b>		<b>2,402.7216</b>



Kilgore Soccer Fields - Sacramento County, Summer

**3.2 Site Preparation - 2017**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0577	0.0335	0.4574	8.8000e-004	0.0761	5.8000e-004	0.0767	0.0202	5.4000e-004	0.0207		87.0526	87.0526	3.3100e-003		87.1354
<b>Total</b>	<b>0.0577</b>	<b>0.0335</b>	<b>0.4574</b>	<b>8.8000e-004</b>	<b>0.0761</b>	<b>5.8000e-004</b>	<b>0.0767</b>	<b>0.0202</b>	<b>5.4000e-004</b>	<b>0.0207</b>		<b>87.0526</b>	<b>87.0526</b>	<b>3.3100e-003</b>		<b>87.1354</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					12.0442	0.0000	12.0442	6.6205	0.0000	6.6205			0.0000			0.0000
Off-Road	3.0960	32.8210	14.0410	0.0233		1.7664	1.7664		1.6251	1.6251	0.0000	2,384.4567	2,384.4567	0.7306		2,402.7216
<b>Total</b>	<b>3.0960</b>	<b>32.8210</b>	<b>14.0410</b>	<b>0.0233</b>	<b>12.0442</b>	<b>1.7664</b>	<b>13.8106</b>	<b>6.6205</b>	<b>1.6251</b>	<b>8.2456</b>	<b>0.0000</b>	<b>2,384.4567</b>	<b>2,384.4567</b>	<b>0.7306</b>		<b>2,402.7216</b>

Kilgore Soccer Fields - Sacramento County, Summer

**3.2 Site Preparation - 2017**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0577	0.0335	0.4574	8.8000e-004	0.0761	5.8000e-004	0.0767	0.0202	5.4000e-004	0.0207		87.0526	87.0526	3.3100e-003		87.1354
<b>Total</b>	<b>0.0577</b>	<b>0.0335</b>	<b>0.4574</b>	<b>8.8000e-004</b>	<b>0.0761</b>	<b>5.8000e-004</b>	<b>0.0767</b>	<b>0.0202</b>	<b>5.4000e-004</b>	<b>0.0207</b>		<b>87.0526</b>	<b>87.0526</b>	<b>3.3100e-003</b>		<b>87.1354</b>

**3.3 Grading - 2017**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1431	0.0000	8.1431	3.5393	0.0000	3.5393			0.0000			0.0000
Off-Road	5.2550	61.5656	27.8542	0.0524		2.8150	2.8150		2.5898	2.5898		5,356.1003	5,356.1003	1.6411		5,397.1278
<b>Total</b>	<b>5.2550</b>	<b>61.5656</b>	<b>27.8542</b>	<b>0.0524</b>	<b>8.1431</b>	<b>2.8150</b>	<b>10.9581</b>	<b>3.5393</b>	<b>2.5898</b>	<b>6.1291</b>		<b>5,356.1003</b>	<b>5,356.1003</b>	<b>1.6411</b>		<b>5,397.1278</b>

Kilgore Soccer Fields - Sacramento County, Summer

**3.3 Grading - 2017**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1154	0.0670	0.9148	1.7500e-003	0.1521	1.1700e-003	0.1533	0.0404	1.0800e-003	0.0414		174.1051	174.1051	6.6300e-003		174.2709
<b>Total</b>	<b>0.1154</b>	<b>0.0670</b>	<b>0.9148</b>	<b>1.7500e-003</b>	<b>0.1521</b>	<b>1.1700e-003</b>	<b>0.1533</b>	<b>0.0404</b>	<b>1.0800e-003</b>	<b>0.0414</b>		<b>174.1051</b>	<b>174.1051</b>	<b>6.6300e-003</b>		<b>174.2709</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1431	0.0000	8.1431	3.5393	0.0000	3.5393			0.0000			0.0000
Off-Road	5.2550	61.5656	27.8542	0.0524		2.8150	2.8150		2.5898	2.5898	0.0000	5,356.1003	5,356.1003	1.6411		5,397.1278
<b>Total</b>	<b>5.2550</b>	<b>61.5656</b>	<b>27.8542</b>	<b>0.0524</b>	<b>8.1431</b>	<b>2.8150</b>	<b>10.9581</b>	<b>3.5393</b>	<b>2.5898</b>	<b>6.1291</b>	<b>0.0000</b>	<b>5,356.1003</b>	<b>5,356.1003</b>	<b>1.6411</b>		<b>5,397.1278</b>

Kilgore Soccer Fields - Sacramento County, Summer

**3.3 Grading - 2017**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1154	0.0670	0.9148	1.7500e-003	0.1521	1.1700e-003	0.1533	0.0404	1.0800e-003	0.0414		174.1051	174.1051	6.6300e-003		174.2709
<b>Total</b>	<b>0.1154</b>	<b>0.0670</b>	<b>0.9148</b>	<b>1.7500e-003</b>	<b>0.1521</b>	<b>1.1700e-003</b>	<b>0.1533</b>	<b>0.0404</b>	<b>1.0800e-003</b>	<b>0.0414</b>		<b>174.1051</b>	<b>174.1051</b>	<b>6.6300e-003</b>		<b>174.2709</b>

**3.4 Building Construction - 2017**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.2532	57.3853	27.5488	0.0479		2.9804	2.9804		2.7419	2.7419		4,897.0988	4,897.0988	1.5005		4,934.6103
<b>Total</b>	<b>5.2532</b>	<b>57.3853</b>	<b>27.5488</b>	<b>0.0479</b>		<b>2.9804</b>	<b>2.9804</b>		<b>2.7419</b>	<b>2.7419</b>		<b>4,897.0988</b>	<b>4,897.0988</b>	<b>1.5005</b>		<b>4,934.6103</b>

Kilgore Soccer Fields - Sacramento County, Summer

**3.4 Building Construction - 2017**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4871	10.3194	3.8740	0.0196	0.4636	0.0949	0.5584	0.1334	0.0908	0.2242		2,063.0707	2,063.0707	0.1343		2,066.4282
Worker	1.1423	0.6636	9.0568	0.0174	1.5062	0.0116	1.5177	0.3995	0.0107	0.4102		1,723.6407	1,723.6407	0.0656		1,725.2815
<b>Total</b>	<b>1.6294</b>	<b>10.9830</b>	<b>12.9308</b>	<b>0.0369</b>	<b>1.9697</b>	<b>0.1064</b>	<b>2.0762</b>	<b>0.5329</b>	<b>0.1014</b>	<b>0.6344</b>		<b>3,786.7114</b>	<b>3,786.7114</b>	<b>0.1999</b>		<b>3,791.7097</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.2532	57.3853	27.5488	0.0479		2.9804	2.9804		2.7419	2.7419	0.0000	4,897.0988	4,897.0988	1.5005		4,934.6103
<b>Total</b>	<b>5.2532</b>	<b>57.3853</b>	<b>27.5488</b>	<b>0.0479</b>		<b>2.9804</b>	<b>2.9804</b>		<b>2.7419</b>	<b>2.7419</b>	<b>0.0000</b>	<b>4,897.0988</b>	<b>4,897.0988</b>	<b>1.5005</b>		<b>4,934.6103</b>

Kilgore Soccer Fields - Sacramento County, Summer

**3.4 Building Construction - 2017**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4871	10.3194	3.8740	0.0196	0.4636	0.0949	0.5584	0.1334	0.0908	0.2242		2,063.070 7	2,063.070 7	0.1343		2,066.428 2
Worker	1.1423	0.6636	9.0568	0.0174	1.5062	0.0116	1.5177	0.3995	0.0107	0.4102		1,723.640 7	1,723.640 7	0.0656		1,725.281 5
<b>Total</b>	<b>1.6294</b>	<b>10.9830</b>	<b>12.9308</b>	<b>0.0369</b>	<b>1.9697</b>	<b>0.1064</b>	<b>2.0762</b>	<b>0.5329</b>	<b>0.1014</b>	<b>0.6344</b>		<b>3,786.711 4</b>	<b>3,786.711 4</b>	<b>0.1999</b>		<b>3,791.709 7</b>

**3.5 Paving - 2017**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2798	14.3174	8.8740	0.0167		0.7694	0.7694		0.7079	0.7079		1,708.266 7	1,708.266 7	0.5234		1,721.352 0
Paving	0.1847					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.4645</b>	<b>14.3174</b>	<b>8.8740</b>	<b>0.0167</b>		<b>0.7694</b>	<b>0.7694</b>		<b>0.7079</b>	<b>0.7079</b>		<b>1,708.266 7</b>	<b>1,708.266 7</b>	<b>0.5234</b>		<b>1,721.352 0</b>

Kilgore Soccer Fields - Sacramento County, Summer

**3.5 Paving - 2017**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0577	0.0335	0.4574	8.8000e-004	0.0761	5.8000e-004	0.0767	0.0202	5.4000e-004	0.0207		87.0526	87.0526	3.3100e-003		87.1354
<b>Total</b>	<b>0.0577</b>	<b>0.0335</b>	<b>0.4574</b>	<b>8.8000e-004</b>	<b>0.0761</b>	<b>5.8000e-004</b>	<b>0.0767</b>	<b>0.0202</b>	<b>5.4000e-004</b>	<b>0.0207</b>		<b>87.0526</b>	<b>87.0526</b>	<b>3.3100e-003</b>		<b>87.1354</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2798	14.3174	8.8740	0.0167		0.7694	0.7694		0.7079	0.7079	0.0000	1,708.2667	1,708.2667	0.5234		1,721.3520
Paving	0.1847					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.4645</b>	<b>14.3174</b>	<b>8.8740</b>	<b>0.0167</b>		<b>0.7694</b>	<b>0.7694</b>		<b>0.7079</b>	<b>0.7079</b>	<b>0.0000</b>	<b>1,708.2667</b>	<b>1,708.2667</b>	<b>0.5234</b>		<b>1,721.3520</b>

Kilgore Soccer Fields - Sacramento County, Summer

**3.5 Paving - 2017**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0577	0.0335	0.4574	8.8000e-004	0.0761	5.8000e-004	0.0767	0.0202	5.4000e-004	0.0207		87.0526	87.0526	3.3100e-003		87.1354
<b>Total</b>	<b>0.0577</b>	<b>0.0335</b>	<b>0.4574</b>	<b>8.8000e-004</b>	<b>0.0761</b>	<b>5.8000e-004</b>	<b>0.0767</b>	<b>0.0202</b>	<b>5.4000e-004</b>	<b>0.0207</b>		<b>87.0526</b>	<b>87.0526</b>	<b>3.3100e-003</b>		<b>87.1354</b>

**4.0 Operational Detail - Mobile**

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**4.1 Mitigation Measures Mobile**



Kilgore Soccer Fields - Sacramento County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.8898	9.5093	53.6792	0.1133	9.0012	0.1336	9.1348	2.4066	0.1257	2.5324		11,352.10 51	11,352.10 51	0.6060		11,367.25 51
Unmitigated	5.8898	9.5093	53.6792	0.1133	9.0012	0.1336	9.1348	2.4066	0.1257	2.5324		11,352.10 51	11,352.10 51	0.6060		11,367.25 51

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1,277.99	2,303.97	123.21	2,323,884	2,323,884
Parking Lot	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
<b>Total</b>	<b>1,277.99</b>	<b>2,303.97</b>	<b>123.21</b>	<b>2,323,884</b>	<b>2,323,884</b>

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Kilgore Soccer Fields - Sacramento County, Summer

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.542099	0.043979	0.200930	0.130553	0.025071	0.005992	0.018223	0.020644	0.002135	0.002531	0.006123	0.000624	0.001096
City Park	0.562743	0.043979	0.200930	0.130553	0.025071	0.005992	0.018223	0.000000	0.002135	0.002531	0.006123	0.000624	0.001096
Other Non-Asphalt Surfaces	0.542099	0.043979	0.200930	0.130553	0.025071	0.005992	0.018223	0.020644	0.002135	0.002531	0.006123	0.000624	0.001096

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Kilgore Soccer Fields - Sacramento County, Summer

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail**

Kilgore Soccer Fields - Sacramento County, Summer

**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0730	3.1000e-004	0.0332	0.0000		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		0.0702	0.0702	1.9000e-004		0.0751
Unmitigated	0.0730	3.1000e-004	0.0332	0.0000		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		0.0702	0.0702	1.9000e-004		0.0751

**6.2 Area by SubCategory**

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0698					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.1800e-003	3.1000e-004	0.0332	0.0000		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		0.0702	0.0702	1.9000e-004		0.0751
<b>Total</b>	<b>0.0730</b>	<b>3.1000e-004</b>	<b>0.0332</b>	<b>0.0000</b>		<b>1.2000e-004</b>	<b>1.2000e-004</b>		<b>1.2000e-004</b>	<b>1.2000e-004</b>		<b>0.0702</b>	<b>0.0702</b>	<b>1.9000e-004</b>		<b>0.0751</b>

Kilgore Soccer Fields - Sacramento County, Summer

**6.2 Area by SubCategory**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0698					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.1800e-003	3.1000e-004	0.0332	0.0000		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		0.0702	0.0702	1.9000e-004		0.0751
<b>Total</b>	<b>0.0730</b>	<b>3.1000e-004</b>	<b>0.0332</b>	<b>0.0000</b>		<b>1.2000e-004</b>	<b>1.2000e-004</b>		<b>1.2000e-004</b>	<b>1.2000e-004</b>		<b>0.0702</b>	<b>0.0702</b>	<b>1.9000e-004</b>		<b>0.0751</b>

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

**8.0 Waste Detail**

**8.1 Mitigation Measures Waste**

**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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**10.0 Stationary Equipment**

Fire Pumps and Emergency Generators

Kilgore Soccer Fields - Sacramento County, Summer

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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**11.0 Vegetation**

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Kilgore Soccer Fields - Sacramento County, Winter

**Kilgore Soccer Fields**  
**Sacramento County, Winter**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	313.00	Space	2.82	125,200.00	0
City Park	7.36	Acre	7.36	320,601.60	0
Other Non-Asphalt Surfaces	0.58	Acre	0.58	25,264.80	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	3.5	<b>Precipitation Freq (Days)</b>	58
<b>Climate Zone</b>	6			<b>Operational Year</b>	2018
<b>Utility Company</b>	Sacramento Municipal Utility District				
<b>CO2 Intensity (lb/MWhr)</b>	590.31	<b>CH4 Intensity (lb/MWhr)</b>	0.029	<b>N2O Intensity (lb/MWhr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Kilgore Soccer Fields - Sacramento County, Winter

Project Characteristics - Kilgore

Land Use - 3.4 acres of pavement

Construction Phase - Construction anticipated to last 3 months

Off-road Equipment - Construction equipment derived from Project Description

Off-road Equipment - Construction equipment derived from Project Description

Off-road Equipment - Construction equipment derived from Project Description

Off-road Equipment - Construction equipment derived from Project Description

Grading -

Vehicle Trips - Trip generation based .

Energy Use - Energy use accounts for proposed parking lot and field lights. Kilowatt data derived from Lighting and Photometrics sheet

Water And Wastewater - Water use derived from Project Description

Operational Off-Road Equipment - glitch

Fleet Mix - No Heavy-Heavy Duty Trucks anticipated

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	150
tblAreaCoating	Area_EF_Nonresidential_Interior	100	150
tblAreaCoating	Area_EF_Parking	100	0
tblConstructionPhase	NumDays	300.00	40.00
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	PhaseEndDate	1/19/2018	11/24/2017
tblConstructionPhase	PhaseStartDate	11/25/2017	9/30/2017
tblEnergyUse	LightingElect	0.00	0.29
tblEnergyUse	LightingElect	0.88	1.00
tblFleetMix	HHD	0.02	0.00
tblFleetMix	LDA	0.54	0.56
tblOffRoadEquipment	OffRoadEquipmentType		Rollers



Kilgore Soccer Fields - Sacramento County, Winter

tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Surfacing Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblVehicleTrips	ST_TR	22.75	313.04
tblVehicleTrips	WD_TR	1.89	173.64
tblWater	OutdoorWaterUseRate	8,769,302.73	651,703.00

**2.0 Emissions Summary**



Kilgore Soccer Fields - Sacramento County, Winter

**2.2 Overall Operational**

**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0730	3.1000e-004	0.0332	0.0000		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		0.0702	0.0702	1.9000e-004		0.0751
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	4.3798	10.8350	51.5948	0.1014	9.0012	0.1339	9.1351	2.4066	0.1260	2.5327		10,167.3259	10,167.3259	0.5950		10,182.2016
<b>Total</b>	<b>4.4528</b>	<b>10.8353</b>	<b>51.6280</b>	<b>0.1014</b>	<b>9.0012</b>	<b>0.1340</b>	<b>9.1352</b>	<b>2.4066</b>	<b>0.1261</b>	<b>2.5328</b>		<b>10,167.3961</b>	<b>10,167.3961</b>	<b>0.5952</b>	<b>0.0000</b>	<b>10,182.2767</b>

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0730	3.1000e-004	0.0332	0.0000		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		0.0702	0.0702	1.9000e-004		0.0751
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	4.3798	10.8350	51.5948	0.1014	9.0012	0.1339	9.1351	2.4066	0.1260	2.5327		10,167.3259	10,167.3259	0.5950		10,182.2016
<b>Total</b>	<b>4.4528</b>	<b>10.8353</b>	<b>51.6280</b>	<b>0.1014</b>	<b>9.0012</b>	<b>0.1340</b>	<b>9.1352</b>	<b>2.4066</b>	<b>0.1261</b>	<b>2.5328</b>		<b>10,167.3961</b>	<b>10,167.3961</b>	<b>0.5952</b>	<b>0.0000</b>	<b>10,182.2767</b>

## Kilgore Soccer Fields - Sacramento County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

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#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/7/2017	8/18/2017	5	10	
2	Grading	Grading	8/19/2017	9/29/2017	5	30	
3	Building Construction	Building Construction	9/30/2017	11/24/2017	5	40	
4	Paving	Paving	9/30/2017	11/24/2017	5	40	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 60**

**Acres of Paving: 3.4**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

Kilgore Soccer Fields - Sacramento County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	2	8.00	187	0.41
Grading	Rollers	1	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Scrapers	1	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Trenchers	1	8.00	78	0.50
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Rough Terrain Forklifts	1	8.00	100	0.40
Building Construction	Rubber Tired Dozers	2	8.00	247	0.40
Building Construction	Rubber Tired Loaders	1	8.00	203	0.36
Building Construction	Skid Steer Loaders	1	8.00	65	0.37
Building Construction	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Trenchers	1	8.00	78	0.50
Building Construction	Welders	0	8.00	46	0.45
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Surfacing Equipment	1	8.00	263	0.30
Paving	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Kilgore Soccer Fields - Sacramento County, Winter

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	4	10.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	198.00	77.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	4	10.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

**3.2 Site Preparation - 2017**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					12.0442	0.0000	12.0442	6.6205	0.0000	6.6205			0.0000			0.0000
Off-Road	3.0960	32.8210	14.0410	0.0233		1.7664	1.7664		1.6251	1.6251		2,384.4567	2,384.4567	0.7306		2,402.7216
<b>Total</b>	<b>3.0960</b>	<b>32.8210</b>	<b>14.0410</b>	<b>0.0233</b>	<b>12.0442</b>	<b>1.7664</b>	<b>13.8106</b>	<b>6.6205</b>	<b>1.6251</b>	<b>8.2456</b>		<b>2,384.4567</b>	<b>2,384.4567</b>	<b>0.7306</b>		<b>2,402.7216</b>

Kilgore Soccer Fields - Sacramento County, Winter

**3.2 Site Preparation - 2017**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0536	0.0415	0.3995	7.7000e-004	0.0761	5.8000e-004	0.0767	0.0202	5.4000e-004	0.0207		76.4851	76.4851	2.9800e-003		76.5596
<b>Total</b>	<b>0.0536</b>	<b>0.0415</b>	<b>0.3995</b>	<b>7.7000e-004</b>	<b>0.0761</b>	<b>5.8000e-004</b>	<b>0.0767</b>	<b>0.0202</b>	<b>5.4000e-004</b>	<b>0.0207</b>		<b>76.4851</b>	<b>76.4851</b>	<b>2.9800e-003</b>		<b>76.5596</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					12.0442	0.0000	12.0442	6.6205	0.0000	6.6205			0.0000			0.0000
Off-Road	3.0960	32.8210	14.0410	0.0233		1.7664	1.7664		1.6251	1.6251	0.0000	2,384.4567	2,384.4567	0.7306		2,402.7216
<b>Total</b>	<b>3.0960</b>	<b>32.8210</b>	<b>14.0410</b>	<b>0.0233</b>	<b>12.0442</b>	<b>1.7664</b>	<b>13.8106</b>	<b>6.6205</b>	<b>1.6251</b>	<b>8.2456</b>	<b>0.0000</b>	<b>2,384.4567</b>	<b>2,384.4567</b>	<b>0.7306</b>		<b>2,402.7216</b>

Kilgore Soccer Fields - Sacramento County, Winter

**3.2 Site Preparation - 2017**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0536	0.0415	0.3995	7.7000e-004	0.0761	5.8000e-004	0.0767	0.0202	5.4000e-004	0.0207		76.4851	76.4851	2.9800e-003		76.5596
<b>Total</b>	<b>0.0536</b>	<b>0.0415</b>	<b>0.3995</b>	<b>7.7000e-004</b>	<b>0.0761</b>	<b>5.8000e-004</b>	<b>0.0767</b>	<b>0.0202</b>	<b>5.4000e-004</b>	<b>0.0207</b>		<b>76.4851</b>	<b>76.4851</b>	<b>2.9800e-003</b>		<b>76.5596</b>

**3.3 Grading - 2017**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1431	0.0000	8.1431	3.5393	0.0000	3.5393			0.0000			0.0000
Off-Road	5.2550	61.5656	27.8542	0.0524		2.8150	2.8150		2.5898	2.5898		5,356.1003	5,356.1003	1.6411		5,397.1278
<b>Total</b>	<b>5.2550</b>	<b>61.5656</b>	<b>27.8542</b>	<b>0.0524</b>	<b>8.1431</b>	<b>2.8150</b>	<b>10.9581</b>	<b>3.5393</b>	<b>2.5898</b>	<b>6.1291</b>		<b>5,356.1003</b>	<b>5,356.1003</b>	<b>1.6411</b>		<b>5,397.1278</b>



Kilgore Soccer Fields - Sacramento County, Winter

**3.3 Grading - 2017**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1071	0.0830	0.7989	1.5400e-003	0.1521	1.1700e-003	0.1533	0.0404	1.0800e-003	0.0414		152.9702	152.9702	5.9600e-003		153.1191
<b>Total</b>	<b>0.1071</b>	<b>0.0830</b>	<b>0.7989</b>	<b>1.5400e-003</b>	<b>0.1521</b>	<b>1.1700e-003</b>	<b>0.1533</b>	<b>0.0404</b>	<b>1.0800e-003</b>	<b>0.0414</b>		<b>152.9702</b>	<b>152.9702</b>	<b>5.9600e-003</b>		<b>153.1191</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1431	0.0000	8.1431	3.5393	0.0000	3.5393			0.0000			0.0000
Off-Road	5.2550	61.5656	27.8542	0.0524		2.8150	2.8150		2.5898	2.5898	0.0000	5,356.1003	5,356.1003	1.6411		5,397.1278
<b>Total</b>	<b>5.2550</b>	<b>61.5656</b>	<b>27.8542</b>	<b>0.0524</b>	<b>8.1431</b>	<b>2.8150</b>	<b>10.9581</b>	<b>3.5393</b>	<b>2.5898</b>	<b>6.1291</b>	<b>0.0000</b>	<b>5,356.1003</b>	<b>5,356.1003</b>	<b>1.6411</b>		<b>5,397.1278</b>

Kilgore Soccer Fields - Sacramento County, Winter

**3.3 Grading - 2017**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1071	0.0830	0.7989	1.5400e-003	0.1521	1.1700e-003	0.1533	0.0404	1.0800e-003	0.0414		152.9702	152.9702	5.9600e-003		153.1191
<b>Total</b>	<b>0.1071</b>	<b>0.0830</b>	<b>0.7989</b>	<b>1.5400e-003</b>	<b>0.1521</b>	<b>1.1700e-003</b>	<b>0.1533</b>	<b>0.0404</b>	<b>1.0800e-003</b>	<b>0.0414</b>		<b>152.9702</b>	<b>152.9702</b>	<b>5.9600e-003</b>		<b>153.1191</b>

**3.4 Building Construction - 2017**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.2532	57.3853	27.5488	0.0479		2.9804	2.9804		2.7419	2.7419		4,897.0988	4,897.0988	1.5005		4,934.6103
<b>Total</b>	<b>5.2532</b>	<b>57.3853</b>	<b>27.5488</b>	<b>0.0479</b>		<b>2.9804</b>	<b>2.9804</b>		<b>2.7419</b>	<b>2.7419</b>		<b>4,897.0988</b>	<b>4,897.0988</b>	<b>1.5005</b>		<b>4,934.6103</b>

Kilgore Soccer Fields - Sacramento County, Winter

**3.4 Building Construction - 2017**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5139	10.6271	4.3341	0.0191	0.4636	0.0971	0.5606	0.1334	0.0929	0.2263		2,013.6870	2,013.6870	0.1458		2,017.3313
Worker	1.0604	0.8218	7.9094	0.0153	1.5062	0.0116	1.5177	0.3995	0.0107	0.4102		1,514.4051	1,514.4051	0.0590		1,515.8793
<b>Total</b>	<b>1.5743</b>	<b>11.4489</b>	<b>12.2434</b>	<b>0.0343</b>	<b>1.9697</b>	<b>0.1086</b>	<b>2.0783</b>	<b>0.5329</b>	<b>0.1035</b>	<b>0.6365</b>		<b>3,528.0921</b>	<b>3,528.0921</b>	<b>0.2047</b>		<b>3,533.2106</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.2532	57.3853	27.5488	0.0479		2.9804	2.9804		2.7419	2.7419	0.0000	4,897.0988	4,897.0988	1.5005		4,934.6103
<b>Total</b>	<b>5.2532</b>	<b>57.3853</b>	<b>27.5488</b>	<b>0.0479</b>		<b>2.9804</b>	<b>2.9804</b>		<b>2.7419</b>	<b>2.7419</b>	<b>0.0000</b>	<b>4,897.0988</b>	<b>4,897.0988</b>	<b>1.5005</b>		<b>4,934.6103</b>

Kilgore Soccer Fields - Sacramento County, Winter

**3.4 Building Construction - 2017**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5139	10.6271	4.3341	0.0191	0.4636	0.0971	0.5606	0.1334	0.0929	0.2263		2,013.6870	2,013.6870	0.1458		2,017.3313
Worker	1.0604	0.8218	7.9094	0.0153	1.5062	0.0116	1.5177	0.3995	0.0107	0.4102		1,514.4051	1,514.4051	0.0590		1,515.8793
<b>Total</b>	<b>1.5743</b>	<b>11.4489</b>	<b>12.2434</b>	<b>0.0343</b>	<b>1.9697</b>	<b>0.1086</b>	<b>2.0783</b>	<b>0.5329</b>	<b>0.1035</b>	<b>0.6365</b>		<b>3,528.0921</b>	<b>3,528.0921</b>	<b>0.2047</b>		<b>3,533.2106</b>

**3.5 Paving - 2017**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2798	14.3174	8.8740	0.0167		0.7694	0.7694		0.7079	0.7079		1,708.2667	1,708.2667	0.5234		1,721.3520
Paving	0.1847					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.4645</b>	<b>14.3174</b>	<b>8.8740</b>	<b>0.0167</b>		<b>0.7694</b>	<b>0.7694</b>		<b>0.7079</b>	<b>0.7079</b>		<b>1,708.2667</b>	<b>1,708.2667</b>	<b>0.5234</b>		<b>1,721.3520</b>

Kilgore Soccer Fields - Sacramento County, Winter

**3.5 Paving - 2017**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0536	0.0415	0.3995	7.7000e-004	0.0761	5.8000e-004	0.0767	0.0202	5.4000e-004	0.0207		76.4851	76.4851	2.9800e-003		76.5596
<b>Total</b>	<b>0.0536</b>	<b>0.0415</b>	<b>0.3995</b>	<b>7.7000e-004</b>	<b>0.0761</b>	<b>5.8000e-004</b>	<b>0.0767</b>	<b>0.0202</b>	<b>5.4000e-004</b>	<b>0.0207</b>		<b>76.4851</b>	<b>76.4851</b>	<b>2.9800e-003</b>		<b>76.5596</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2798	14.3174	8.8740	0.0167		0.7694	0.7694		0.7079	0.7079	0.0000	1,708.2667	1,708.2667	0.5234		1,721.3520
Paving	0.1847					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.4645</b>	<b>14.3174</b>	<b>8.8740</b>	<b>0.0167</b>		<b>0.7694</b>	<b>0.7694</b>		<b>0.7079</b>	<b>0.7079</b>	<b>0.0000</b>	<b>1,708.2667</b>	<b>1,708.2667</b>	<b>0.5234</b>		<b>1,721.3520</b>

Kilgore Soccer Fields - Sacramento County, Winter

**3.5 Paving - 2017**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0536	0.0415	0.3995	7.7000e-004	0.0761	5.8000e-004	0.0767	0.0202	5.4000e-004	0.0207		76.4851	76.4851	2.9800e-003		76.5596
<b>Total</b>	<b>0.0536</b>	<b>0.0415</b>	<b>0.3995</b>	<b>7.7000e-004</b>	<b>0.0761</b>	<b>5.8000e-004</b>	<b>0.0767</b>	<b>0.0202</b>	<b>5.4000e-004</b>	<b>0.0207</b>		<b>76.4851</b>	<b>76.4851</b>	<b>2.9800e-003</b>		<b>76.5596</b>

**4.0 Operational Detail - Mobile**

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**4.1 Mitigation Measures Mobile**

Kilgore Soccer Fields - Sacramento County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.3798	10.8350	51.5948	0.1014	9.0012	0.1339	9.1351	2.4066	0.1260	2.5327		10,167.3259	10,167.3259	0.5950		10,182.2016
Unmitigated	4.3798	10.8350	51.5948	0.1014	9.0012	0.1339	9.1351	2.4066	0.1260	2.5327		10,167.3259	10,167.3259	0.5950		10,182.2016

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1,277.99	2,303.97	123.21	2,323,884	2,323,884
Parking Lot	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	1,277.99	2,303.97	123.21	2,323,884	2,323,884

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Kilgore Soccer Fields - Sacramento County, Winter

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.542099	0.043979	0.200930	0.130553	0.025071	0.005992	0.018223	0.020644	0.002135	0.002531	0.006123	0.000624	0.001096
City Park	0.562743	0.043979	0.200930	0.130553	0.025071	0.005992	0.018223	0.000000	0.002135	0.002531	0.006123	0.000624	0.001096
Other Non-Asphalt Surfaces	0.542099	0.043979	0.200930	0.130553	0.025071	0.005992	0.018223	0.020644	0.002135	0.002531	0.006123	0.000624	0.001096

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000



Kilgore Soccer Fields - Sacramento County, Winter

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail**

Kilgore Soccer Fields - Sacramento County, Winter

**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Mitigated	0.0730	3.1000e-004	0.0332	0.0000		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		0.0702	0.0702	1.9000e-004			0.0751
Unmitigated	0.0730	3.1000e-004	0.0332	0.0000		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		0.0702	0.0702	1.9000e-004			0.0751

**6.2 Area by SubCategory**

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
SubCategory	lb/day										lb/day						
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Consumer Products	0.0698					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Landscaping	3.1800e-003	3.1000e-004	0.0332	0.0000		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		0.0702	0.0702	1.9000e-004			0.0751
<b>Total</b>	<b>0.0730</b>	<b>3.1000e-004</b>	<b>0.0332</b>	<b>0.0000</b>		<b>1.2000e-004</b>	<b>1.2000e-004</b>		<b>1.2000e-004</b>	<b>1.2000e-004</b>		<b>0.0702</b>	<b>0.0702</b>	<b>1.9000e-004</b>			<b>0.0751</b>

Kilgore Soccer Fields - Sacramento County, Winter

**6.2 Area by SubCategory**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0698					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.1800e-003	3.1000e-004	0.0332	0.0000		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		0.0702	0.0702	1.9000e-004		0.0751
<b>Total</b>	<b>0.0730</b>	<b>3.1000e-004</b>	<b>0.0332</b>	<b>0.0000</b>		<b>1.2000e-004</b>	<b>1.2000e-004</b>		<b>1.2000e-004</b>	<b>1.2000e-004</b>		<b>0.0702</b>	<b>0.0702</b>	<b>1.9000e-004</b>		<b>0.0751</b>

**7.0 Water Detail**

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**7.1 Mitigation Measures Water**

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

**9.0 Operational Offroad**

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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**10.0 Stationary Equipment**

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Fire Pumps and Emergency Generators

Kilgore Soccer Fields - Sacramento County, Winter

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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**11.0 Vegetation**

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## **APPENDIX D – BIOLOGICAL RESOURCES**



## Appendix D – Special-Status Species Table and Database Results

### Special-Status Species Potentially Occurring in the Project Site

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	General Habitat Characteristics	Habitat Present (P)/ Absent (A)	Rationale
<b>Plants</b>							
<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>	Peruvian dodder	-	-	2B.2	Freshwater marshes and swamps. Elev: 49-919 ft. (15-280 m.) Blooms: July-October (CNPS 2016).	A	<b>No effect.</b> Suitable habitat is not present. There are no marshes or swamps in the project area.
<i>Downingia pusilla</i>	Dwarf downingia	-	-	2B.2	Valley and foothill grasslands (mesic), vernal pools. Elev: 3-1,460 ft. (1-445 m.) Blooms: March-May (CNPS 2016).	A	<b>No effect.</b> Suitable habitat not present, and not detected during previous surveys.
<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	-	E	1B.2	Clay soils in marshes, swamps, lake margins, and vernal pools. Elev: 33-7,792 (10-2,375 m.) Blooms: April-August (CNPS 2016).	A	<b>No effect.</b> Suitable habitat is not present. There are no marshes or swamps in the project area.
<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	Woolly-rose mallow	-	-	1B.2	Moist, freshwater-soaked river banks and low peat islands in sloughs; can also occur on riprap and levees. In California, known from the delta watershed (CDFW 2016c). Elev: 0-394 ft. (0-120 m.) Blooms: June-September (CNPS 2016).	A	<b>No effect.</b> Suitable habitat is not present. There are no levees or river banks in the project area.
<i>Juglans hindsii</i>	Northern California black walnut	-	-	1B.1	Riparian forest, riparian woodland. Few extant native stands remain; widely naturalized. Deep alluvial soil associated with a creek or stream (CDFW 2016c). Elev: 0-1,444 ft (0-440 m) Blooms: Apr-May (CNPS 2016).	A	<b>No effect.</b> Suitable habitat is not present in the project area.
<i>Juncus leiospermus</i> var. <i>ahartii</i>	Ahart's dwarf rush	-	-	1B.2	Valley and foothill grasslands (mesic). Elev: 98-751 ft. (30-229 m.) Blooms: March-may (CNPS 2016).	A	<b>No effect.</b> Suitable habitat not present, and not detected during previous surveys.
<i>Legenere limosa</i>	Legenere	-	-	1B.1	Vernal pools. Elev: 3-2,887 ft. (1-880 m) Blooms: April-June (CNPS 2016).	A	<b>No effect.</b> Suitable habitat is not present in the project area.
<i>Lepidium latipes</i> var. <i>heckardii</i>	Heckard's pepper-grass	-	-	1B.2	Alkaline flats in valley and foothill grasslands. Elev: 7-656 ft (2-200 m) Blooms: March-May (CNPS 2016).	A	<b>No effect.</b> Suitable soils are not present in the project area.

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	General Habitat Characteristics	Habitat Present (P)/ Absent (A)	Rationale
<i>Navarretia myersii</i> ssp. <i>myersii</i>	Pincushion navarretia	-	-	1B.1	Acidic soils in vernal pools. Elev: 66-1,083 ft. (20-330 m.) Blooms: April-May (CNPS 2016).	A	<b>No effect.</b> There are no suitable soils in the project area.
<i>Orcuttia tenuis</i>	Slender Orcutt grass	-	-	1B.1	Vernal pools. Elev: 115-5,774 ft (35-1,760 m) Blooms: May-October (CNPS 2016).	A	<b>No effect.</b> Suitable habitat is not present, there are no vernal pools in the project area.
<i>Orcuttia viscida</i>	Sacramento Orcutt grass	FE	SE	1B.1	Vernal pools. Elev: 98-328 ft (30-100 m) Blooms: April-September (CNPS 2016).	A	<b>No effect.</b> Suitable habitat is not present, there are no vernal pools in the project area.
<i>Sagittaria sanfordii</i>	Sanford's arrowhead	FE	SE	1B.2	In standing or slow-moving freshwater ponds, marshes, and ditches (CDFW 2016c). Assorted shallow freshwater marshes and swamps. Elev: 0-2,133 ft (0-650 m) Blooms: May-October (CNPS 2016).	A	<b>No effect.</b> Suitable habitat is not present. There are no aquatic features in the project area.
<i>Trifolium hydrophilum</i>	Saline clover	-	-	1B.2	Marshes and swamps, valley & foothill grassland (mesic, alkaline), and vernal pools. Elev: 0-984 ft (0-300 m) Blooms: April-June (CNPS 2016).	A	<b>No effect.</b> Suitable habitat is not present. There are no suitable soils or aquatic features in the project area.
<b>Invertebrates</b>							
<i>Branchinecta lynchi</i>	Conservancy fairy shrimp	FE	-		Large, turbid playa vernal pools (USFWS 2005).	A	<b>No effect.</b> There are no vernal pools in the project area.
<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp	FT	-		Vernal pools, vernal pool-like habitat (USFWS 2005).	A	<b>No effect.</b> There are no vernal pools in the project area.
<i>Desmocerus californicus dimorphus</i>	Valley elderberry longhorn beetle	FT	-		Host plant = <i>Sambucus</i> spp. with stems at ground level measuring greater than 1.0 inch diameter at ground level (USFWS 1999).	A	<b>No effect.</b> There are no elderberry shrubs within the project area.
<i>Lepidurus packardii</i>	Vernal pool tadpole shrimp	FE	-		Vernal pools, ephemeral wetlands (USFWS 2005).	A	<b>No effect.</b> There are no vernal pools or wetlands in the project area.
<b>Fish</b>							



Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	General Habitat Characteristics	Habitat Present (P)/ Absent (A)	Rationale
<i>Entosphenus tridentatus</i>	Pacific lamprey	-	SSC		Spawn in gravel bottomed streams at the upstream end of riffle habitat. Spawning occurs between March and July (USFWS 2010).	A	<b>No effect.</b> There are no aquatic features in the project area.
<i>Hypomesus transpacificus</i>	Delta smelt	FT	SE		Brackish water below 25°C non-spawning season. Spawning habitat = shallow, fresh, or slightly brackish backwater sloughs with good water quality and substrate (USFWS 1995).	A	<b>No effect.</b> There are no aquatic features in the project area.
<i>Lampetra ayresii</i>	River lamprey	-	SSC		Adults require clean, gravelly riffles in permanent streams for spawning, while the ammocoetes require sandy backwaters or stream edges in which to bury themselves, where water quality is continuously high and temperatures do not exceed 25°C (Moyle et al. 1995).	A	<b>No effect.</b> There are no aquatic features in the project area.
<i>Mylopharodon conocephalus</i>	Hardhead	-	SSC		Small to large streams in a low- to mid-elevation environment. May also inhabit lakes or reservoirs. Their preferred stream temperature might easily exceed 20°C, though these fish do not favor low dissolved oxygen levels. Therefore the hardhead minnow is usually found in clear deep streams with a slow but present flow. Though spawning may occur in pools, runs, or riffles, the bedding area will typically be characterized by gravel and rocky substrate (CalFish 2014).	A	<b>No effect.</b> There are no aquatic features in the project area.
<i>Oncorhynchus mykiss</i>	Central Valley steelhead	FT	-		Spawning habitat = gravel-bottomed, fast-flowing, well-oxygenated rivers and streams. Non-spawning = estuarine, marine waters (Busby et al. 1996).	A	<b>No effect.</b> There are no aquatic features in the project area.
	Central Coast steelhead	FT	-				
<i>Oncorhynchus tshawytscha</i>	Central Valley spring-run Chinook salmon	T (NMFS)	E		Spawning habitat = fast-moving, freshwater streams and rivers. Juvenile habitat = brackish estuaries. Non-spawning = marine waters (Myers et al. 1998).	A	<b>No effect.</b> There are no aquatic features in the project area.
	Winter-run Sacramento River Chinook salmon	E (NMFS)	SSC				
	Central Valley fall/late fall run Chinook salmon	-	SSC				

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	General Habitat Characteristics	Habitat Present (P)/ Absent (A)	Rationale
<i>Pogonichthys macrolepidotus</i>	Sacramento splittail	-	SSC		Prefer slow-moving sections of freshwater rivers and sloughs. Most abundant in Suisun Bay and Marsh region. Largely absent from Sacramento River except during spawning (Moyle et al. 1995).	A	<b>No effect.</b> There are no aquatic features in the project area.
<i>Spirinchus thaleichthys</i>	Longfin smelt	FC	ST		Adults and juveniles require salt or brackish estuary waters. Spawning takes place in freshwater over sandy-gravel substrates, rocks, and aquatic plants (Moyle et al. 1995).	A	<b>No effect.</b> There are no aquatic features in the project area.
<b>Amphibians</b>							
<i>Ambystoma californiense</i>	California tiger salamander	FT	ST		Breeding ponds are usually fish-free and ephemeral. Ponds form in winter and dry in summer. May also breed in slow streams and semi-permanent waters, including cattle ponds. Needs both suitable upland habitat and breeding ponds. Mostly fossorial and often utilizes mole/ground squirrel burrows. Typical habitat associations include grassland, oak savanna, and edges of mixed woodland and lower elevation coniferous forest (Nafis 2016).	A	<b>No effect.</b> The project is outside of the known range of this species, and there are no nearby suitable breeding ponds.
<i>Rana draytonii</i>	California red-legged frog	FT	SSC		Ponds/streams in humid forests, woodlands, grasslands, coastal scrub, and streambanks with plant cover in lowlands or foothills. Breeding habitat = permanent or ephemeral water sources; lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps. Ephemeral wetland habitats require animal burrows or other moist refuges for aestivation when the wetlands are dry. From sea level to 5,000 ft. (1,525 m.) (Nafis 2016).	A	<b>No effect.</b> There are no nearby occurrences of this species and there is no suitable breeding habitat near the project area.
<i>Spea hammondi</i>	Western spadefoot	-	SSC		Open areas with sandy/gravelly soils. Variable habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Rainpools which do not contain bullfrogs, fish, or crayfish are necessary for breeding (Nafis 2016).	A	<b>No effect.</b> There are no suitable breeding pools in the project area.
<b>Reptiles</b>							

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	General Habitat Characteristics	Habitat Present (P)/ Absent (A)	Rationale
<i>Emys marmorata</i>	Western pond turtle	–	SSC		Ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland. Logs, rocks, cattail mats, and exposed banks are required for basking (Nafis 2016).	A	<b>No effect.</b> The nearby Folsom Canal is a concrete-lined canal with no vegetation on the banks. There is no escape cover present in the project area.
<i>Thamnophis gigas</i>	Giant garter snake	FT	ST		Marshes, sloughs, drainage canals, and irrigation ditches, especially around rice fields, and occasionally in slow-moving creeks. Prefers locations with vegetation close to the water for basking (Nafis 2016).	A	<b>No effect.</b> Suitable habitat is not present in the project area. The nearby Folsom Canal is a concrete-lined canal with no vegetation on the banks.
<b>Birds</b>							
<i>Agelaius tricolor</i>	Tricolored blackbird	–	SSC		Dominant nest substrate species includes cattails, bulrushes, Himalaya berry, and agricultural silage. Dense vegetation is preferred but heavily lodged cattails not burned in recent years may preclude settlement. Need access to open water. Strips of emergent vegetation along canals are avoided as nest sites unless they are about 10 or more m. wide but in some ponds, especially where associated with Himalayan blackberries and deep water, settlement may be in narrower fetches of cattails. If sites are hard for an observer to reach, the site is relatively suitable (Hamilton 2004).	A	<b>No effect.</b> There is no suitable habitat in the project area.
<i>Accipiter cooperii</i>	Cooper's hawk	-	WL		Forages in habitat fringes and patchy woodlands. Occurs in dense stands of oak, riparian and other forested areas near water. Breeds in dense stands of oak woodland or riparian. Ranges from sea level to over 9,000 ft (CDFW 2016c).	A	<b>No effect.</b> There are no adjacent woodlands or riparian areas near the project area.

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	General Habitat Characteristics	Habitat Present (P)/ Absent (A)	Rationale
<i>Ammodramus savannarum</i>	Grasshopper sparrow	-	SSC		In the foothills and lowlands west of the Cascades/Sierras. Dry, dense grasslands, especially those with a variety of grasses and tall forbs and scattered shrubs for singing perches (CDFW 2016c).	P	<b>May effect.</b> Suitable habitat is present in the project area.
<i>Aquila chrysaetos</i>	Golden eagle	-	FP		Uncommon resident and migrant throughout California, except center of Central Valley. Habitat typically rolling foothills, mountain areas, sage-juniper flats, desert (CDFW 2016c).	A	<b>No effect.</b> Suitable habitat is not present in the project area.
<i>Athene cunicularia</i>	Western burrowing owl	-	SSC		Open areas with mammal burrows. Habitats include dry open rolling hills, grasslands, fallow fields, sparsely vegetated desert scrub with gullies, washes, arroyos, and edges of human disturbed lands. Inhabit golf courses, airports, cemeteries, vacant lots, and road embankments, with friable soils (Bates 2006).	P	<b>Not likely to effect.</b> Marginal habitat is present in the project site, however grasses are tall and no mammal burrows have been observed.
<i>Buteo swainsoni</i>	Swainson's hawk	-	FT		Open habitats including prairie, shrubsteppe, desert, and agriculture. Nest locations not strongly correlated with surrounding vegetation. Typically use trees in dense riparian forest, scattered trees, or solitary trees along roadsides or field edges. Understory of nest trees can consist of native shrubs, cultivated crops, or mowed lawns (Woodbridge 1998).	P	<b>May effect.</b> Suitable foraging habitat is present in the project area. There is no suitable nesting habitat in the project area.
<i>Buteo regalis</i>	Ferruginous hawk	-	WL		Found in lower elevations and open grasslands in the Modoc plateau, Central Valley, and Coast Ranges. It occurs in open grasslands, sagebrush flats, desert scrub, low foothills around valleys, and pinyon-juniper habitat fringes (CDFW 2016c).	P	<b>May effect.</b> Suitable foraging habitat is present in the project area. There is no suitable nesting habitat in the project area.

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	General Habitat Characteristics	Habitat Present (P)/ Absent (A)	Rationale
<i>Chaetura vauxi</i>	Vaux's swift	-	SSC		Prefers redwood and Douglas fir habitats with nest sites in large hollow trees and snags, especially tall, burnt-out stubs (CDFW 2016c).	A	<b>No effect.</b> Suitable habitat is not present in the project area.
<i>Circus cyaneus</i>	Northern harrier	-	SSC		Nests on the ground in patches of dense, tall vegetation in undisturbed areas. Breeds and forages in variety of open habitats such as marshes, wet meadows, weedy borders of lakes, rivers and streams, grasslands, pastures, croplands, sagebrush flats and desert sinks (Shuford and Gardali 2008).	P	<b>May effect.</b> Suitable foraging and nesting habitat is present in the project area.
<i>Coccyzus americanus occidentalis</i>	Western yellow-billed cuckoo	PT	SE		Requires large, dense tracts of riparian woodland with well-developed understories. Occurs in deciduous trees or shrubs. Prefers willow, but will also nest in orchards adjacent to streams in Sacramento Valley. Restricted to moist habitats along slow-moving waterways during breeding season (CDFW 2016c).	A	<b>No effect.</b> Suitable habitat is not present. There are no large stands of trees or riparian habitat in the project area.
<i>Elanus leucurus</i>	White-tailed kite	-	FP		Savanna, open woodlands, marshes, desert grassland, cleared lands, and cultivated fields (Cornell 2016a).	P	<b>May effect.</b> Suitable foraging habitat is present in the project area. There is no suitable nesting habitat in the project area.
<i>Falco mexicanus</i>	Prairie falcon	-	WL		Ranges from Central Valley, Sierra Nevada, and Coast Ranges to southeastern deserts. Most commonly found in perennial grasslands, savannahs, rangeland, agricultural fields, and desert scrub. Not in upper Sierra Nevada or northern coastal fog belt. Forages in open areas and uses nearby cliff ledges, canyons or outcrops for cover and nesting (CDFW 2016c).	P	<b>May effect.</b> Suitable foraging habitat may be present. There is no suitable nesting habitat in the project area.

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	General Habitat Characteristics	Habitat Present (P)/ Absent (A)	Rationale
<i>Falco columbarius</i>	Merlin	-	WL		Occurs in California during winter from September to May. Found along coastlines, grasslands, savannahs, woodlands, lakes, wetlands, and habitat fringes. Often in open habitats at low elevations near water and tree stands. Usually below 3,900 ft in western half of the state. Does not breed in California (CDFW 2016c).	P	<b>May effect.</b> Suitable foraging habitat is present in the project area. There is no suitable nesting habitat in the project area.
<i>Grus canadensis tabida</i>	Greater sandhill crane	-	ST		In summer, occurs in and near wet meadow, shallow lacustrine, and fresh emergent wetland habitats. In winter, frequents moist croplands with rice or corn stubble, and open, emergent wetlands. Prefers treeless plains. Nests in remote portions of extensive wetlands or sometimes shortgrass prairies (CDFW 2016c).	A	<b>No effect.</b> Suitable habitat is not present in the project area. There are no wetlands or croplands in or adjacent to the project area.
<i>Haliaeetus leucocephalus</i>	Bald eagle	FD	SE/FP		Nests in large, old-growth, or dominant live tree with open branchwork, especially ponderosa pine. Requires large bodies of water or rivers with abundant fish, and adjacent snags (CDFW 2016c).	A	<b>No effect.</b> Suitable habitat is not present. There is no nearby nesting habitat or large water bodies.
<i>Icteria virens</i>	Yellow-breasted chat	-	SSC		Nests in early-successional riparian habitats with a well-developed shrub layer and an open canopy. Restricted to narrow border of streams, creeks, sloughs and rivers. Often nests in dense thicket plants such as blackberry and willow (Shuford and Gardali 2008).	A	<b>No effect.</b> There is no riparian habitat in the project area.
<i>Lanius ludovicianus</i>	Loggerhead shrike	-	SSC		Breed in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground (Shuford and Gardali 2008).	A	<b>No effect.</b> There is no suitable habitat in the project area. There are no adjacent woodlands or escape cover.
<i>Melospiza melodia</i>	Song sparrow (Modesto population)	-	SSC		Breeds and winters in riparian, fresh or saline emergent wetland, and wet meadows. Breeds in riparian thickets of willows, other shrubs, vines, tall herbs, and fresh or saline emergent vegetation (CDFW 2016c).	A	<b>No effect.</b> There is no suitable habitat in the project area. There is no riparian or wetland habitat present.

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	General Habitat Characteristics	Habitat Present (P)/ Absent (A)	Rationale
<i>Ixobrychus exilis</i>	Least bittern	-	SSC		In Sacramento and San Joaquin valleys it is found in fresh emergent wetlands and nests in cattails and tules. Requires dense emergent wetlands for breeding and foraging (CDFW 2016c).	A	<b>No effect.</b> There is no suitable habitat in the project area. There are no wetlands present.
<i>Pandion haliaetus</i>	Osprey	-	WL		Associated strictly with large fish-bearing waters, mostly in ponderosa pine and mixed conifer habitats (CDFW 2016c).	A	<b>No effect.</b> There is no suitable habitat in the project area. There are no nearby fish-bearing freshwater bodies.
<i>Phalacrocorax auritus</i>	Double-crested comorant	-	WL		Occurs along the coast and on inland lakes and estuarine waters. In the Central Valley and coastal slope lowlands is can be found in lacustrine and riverine habitats. Requires ledges, cliffs, slopes, or tall trees next to water for nesting (CDFW 2016c).	A	<b>No effect.</b> There is no suitable habitat present in the project area. There are no adjacent water bodies with nesting habitat.
<i>Riparia riparia</i>	Bank swallow	-	ST		Low areas along rivers, streams, coastal areas, and reservoirs. Nest in natural bluffs, stream banks, and human-made structures (e.g., sand/gravel quarries or road cuts) (Cornell 2016b).	A	<b>No effect.</b> Suitable habitat not present. There are no aquatic features with nesting habitat in the project area.
<i>Setophaga petechia</i>	Yellow warbler	-	SSC		Riparian vegetation along streams and in wet meadows. Willow cover and Oregon ash important predictors of abundance in northern California (CDFW 2015c).	A	<b>No effect.</b> Suitable habitat is not present. There is no adjacent riparian or willow cover present.
<i>Sternula antillarum browni</i>	Calfiornia least tern	FE	SE		Nests and roosts in colonies on open beaches. Forages near shore ocean waters and in shallow estuaries ad lagoons (USFWS 2006).	A	<b>No effect.</b> The project area is not near an ocean or estuarine area.
<i>Xanthocephalus xanthocephalus</i>	Yellow-headed blackbird	-	SSC		Nest in marshes with tall, emergent vegetation (e.g., tules and cattails) adjacent to deepwater (Shuford and Gardali 2008).	A	<b>No effect.</b> There are no wetlands in the project area.
<b>Mammals</b>							
<i>Antrozous pallidus</i>	Pallid bat	-	SSC		Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings (CDFW 2016c).	P	<b>May effect.</b> Suitable foraging habitat may be present in the project area. There is no suitable roosting habitat present.

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	General Habitat Characteristics	Habitat Present (P)/ Absent (A)	Rationale
<i>Lasiurus blossevillii</i>	Western red bat	-	SSC		Roosting habitat includes forests and woodlands, often in edge habitats adjacent to streams, fields, or urban areas (CDFW 2016c).	P	<b>May effect.</b> Suitable foraging habitat may be present in the project area. There is no suitable roosting habitat present.
<i>Taxidea taxus</i>	American badger	-	SSC		Prefers open areas and may also frequent brushlands with little groundcover. When inactive, occupies underground burrow (NatureServe 2013).	P	<b>Not likely to effect.</b> The project area is disturbed and contains regular human activity nearby. This species is not likely to occur in the project area.

Key		
Federal & State Status	CNPS Rare Plant Rank	
(FE) Federal Endangered	<i>Rareness Ranks</i>	<i>Threat Ranks</i>
(FT) Federal Threatened	(1A) Presumed Extinct in California	(0.1) Seriously threatened in California
(FC) Federal Candidate	(1B) Rare, Threatened, or Endangered in California and Elsewhere	(0.2) Fairly threatened in California
(SE) State Endangered	(2) Rare, Threatened, or Endangered in California, But More Common Elsewhere	(0.3) Not very threatened in California
(ST) State Threatened	(3) More Species Information Needed	
(SSC) State Species of Special Concern	(4) Limited Distribution	
(FP) Fully Protected		



**CNDDB 9-Quad Species List** 258 records.

Element Type	Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status	CA Rare Plant Rank	Quad Code	Quad Name	Data Status	Taxonomic Sort
Animals - Amphibians	Ambystoma californiense	California tiger salamander	AAAAA01180	Threatened	Threatened	SSC	-	3812142	Sloughhouse	Unprocessed	Animals - Amphibians - Ambystomatidae - Ambystoma californiense
Animals - Amphibians	Spea hammondi	western spadefoot	AAABF02020	None	None	SSC	-	3812142	Sloughhouse	Mapped	Animals - Amphibians - Scaphiopodidae - Spea hammondi
Animals - Amphibians	Spea hammondi	western spadefoot	AAABF02020	None	None	SSC	-	3812152	Buffalo Creek	Mapped	Animals - Amphibians - Scaphiopodidae - Spea hammondi
Animals - Amphibians	Spea hammondi	western spadefoot	AAABF02020	None	None	SSC	-	3812153	Carmichael	Mapped and Unprocessed	Animals - Amphibians - Scaphiopodidae - Spea hammondi
Animals - Amphibians	Spea hammondi	western spadefoot	AAABF02020	None	None	SSC	-	3812162	Folsom	Mapped	Animals - Amphibians - Scaphiopodidae - Spea hammondi
Animals - Birds	Accipiter cooperii	Cooper's hawk	ABNKC12040	None	None	WL	-	3812154	Sacramento East	Mapped	Animals - Birds - Accipitridae - Accipiter cooperii
Animals - Birds	Accipiter cooperii	Cooper's hawk	ABNKC12040	None	None	WL	-	3812162	Folsom	Mapped and Unprocessed	Animals - Birds - Accipitridae - Accipiter cooperii
Animals - Birds	Accipiter cooperii	Cooper's hawk	ABNKC12040	None	None	WL	-	3812163	Citrus Heights	Unprocessed	Animals - Birds - Accipitridae - Accipiter cooperii
Animals - Birds	Accipiter cooperii	Cooper's hawk	ABNKC12040	None	None	WL	-	3812153	Carmichael	Mapped and Unprocessed	Animals - Birds - Accipitridae - Accipiter cooperii
Animals - Birds	Accipiter cooperii	Cooper's hawk	ABNKC12040	None	None	WL	-	3812152	Buffalo Creek	Mapped and Unprocessed	Animals - Birds - Accipitridae - Accipiter cooperii
Animals - Birds	Accipiter cooperii	Cooper's hawk	ABNKC12040	None	None	WL	-	3812143	Elk Grove	Mapped	Animals - Birds - Accipitridae - Accipiter cooperii
Animals - Birds	Accipiter cooperii	Cooper's hawk	ABNKC12040	None	None	WL	-	3812144	Florin	Mapped	Animals - Birds - Accipitridae - Accipiter cooperii
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP, WL	-	3812152	Buffalo Creek	Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP, WL	-	3812153	Carmichael	Mapped and Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Buteo regalis	ferruginous hawk	ABNKC19120	None	None	WL	-	3812152	Buffalo Creek	Unprocessed	Animals - Birds - Accipitridae - Buteo regalis
Animals - Birds	Buteo regalis	ferruginous hawk	ABNKC19120	None	None	WL	-	3812144	Florin	Mapped	Animals - Birds - Accipitridae - Buteo regalis
Animals - Birds	Buteo regalis	ferruginous hawk	ABNKC19120	None	None	WL	-	3812153	Carmichael	Mapped and Unprocessed	Animals - Birds - Accipitridae - Buteo regalis
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3812154	Sacramento East	Mapped and Unprocessed	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3812162	Folsom	Mapped	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3812164	Rio Linda	Mapped and Unprocessed	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3812144	Florin	Mapped	Animals - Birds - Accipitridae - Buteo swainsoni

Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3812143	Elk Grove	Mapped and Unprocessed	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3812142	Sloughhouse	Mapped	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3812152	Buffalo Creek	Mapped and Unprocessed	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3812153	Carmichael	Mapped and Unprocessed	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Circus cyaneus	northern harrier	ABNKC11010	None	None	SSC	-	3812153	Carmichael	Unprocessed	Animals - Birds - Accipitridae - Circus cyaneus
Animals - Birds	Circus cyaneus	northern harrier	ABNKC11010	None	None	SSC	-	3812152	Buffalo Creek	Unprocessed	Animals - Birds - Accipitridae - Circus cyaneus
Animals - Birds	Circus cyaneus	northern harrier	ABNKC11010	None	None	SSC	-	3812142	Sloughhouse	Unprocessed	Animals - Birds - Accipitridae - Circus cyaneus
Animals - Birds	Circus cyaneus	northern harrier	ABNKC11010	None	None	SSC	-	3812164	Rio Linda	Unprocessed	Animals - Birds - Accipitridae - Circus cyaneus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812164	Rio Linda	Mapped	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812162	Folsom	Mapped	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812163	Citrus Heights	Mapped	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812154	Sacramento East	Mapped and Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812143	Elk Grove	Mapped	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812142	Sloughhouse	Mapped	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812144	Florin	Mapped and Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812152	Buffalo Creek	Mapped and Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3812153	Carmichael	Mapped and Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP	-	3812162	Folsom	Unprocessed	Animals - Birds - Accipitridae - Haliaeetus leucocephalus
Animals - Birds	Pandion haliaetus	osprey	ABNKC01010	None	None	WL	-	3812163	Citrus Heights	Unprocessed	Animals - Birds - Accipitridae - Pandion haliaetus
Animals - Birds	Pandion haliaetus	osprey	ABNKC01010	None	None	WL	-	3812154	Sacramento East	Unprocessed	Animals - Birds - Accipitridae - Pandion haliaetus
Animals - Birds	Pandion haliaetus	osprey	ABNKC01010	None	None	WL	-	3812153	Carmichael	Unprocessed	Animals - Birds - Accipitridae - Pandion haliaetus
Animals - Birds	Chaetura vauxi	Vaux's swift	ABNUA03020	None	None	SSC	-	3812153	Carmichael	Unprocessed	Animals - Birds - Apodidae - Chaetura vauxi
Animals - Birds	Chaetura vauxi	Vaux's swift	ABNUA03020	None	None	SSC	-	3812163	Citrus Heights	Unprocessed	Animals - Birds - Apodidae - Chaetura vauxi
Animals - Birds	Ardea alba	great egret	ABNGA04040	None	None	-	-	3812162	Folsom	Mapped and Unprocessed	Animals - Birds - Ardeidae - Ardea alba

Animals - Birds	Ardea alba	great egret	ABNGA04040	None	None	-	-	3812164	Rio Linda	Mapped and Unprocessed	Animals - Birds - Ardeidae - Ardea alba
Animals - Birds	Ardea alba	great egret	ABNGA04040	None	None	-	-	3812153	Carmichael	Mapped and Unprocessed	Animals - Birds - Ardeidae - Ardea alba
Animals - Birds	Ardea alba	great egret	ABNGA04040	None	None	-	-	3812144	Florin	Mapped and Unprocessed	Animals - Birds - Ardeidae - Ardea alba
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812144	Florin	Mapped and Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812153	Carmichael	Mapped and Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812164	Rio Linda	Mapped and Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812162	Folsom	Mapped and Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812163	Citrus Heights	Mapped and Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812154	Sacramento East	Mapped	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Botaurus lentiginosus	American bittern	ABNGA01020	None	None	-	-	3812144	Florin	Unprocessed	Animals - Birds - Ardeidae - Botaurus lentiginosus
Animals - Birds	Egretta thula	snowy egret	ABNGA06030	None	None	-	-	3812144	Florin	Unprocessed	Animals - Birds - Ardeidae - Egretta thula
Animals - Birds	Egretta thula	snowy egret	ABNGA06030	None	None	-	-	3812153	Carmichael	Unprocessed	Animals - Birds - Ardeidae - Egretta thula
Animals - Birds	Egretta thula	snowy egret	ABNGA06030	None	None	-	-	3812164	Rio Linda	Unprocessed	Animals - Birds - Ardeidae - Egretta thula
Animals - Birds	Ixobrychus exilis	least bittern	ABNGA02010	None	None	SSC	-	3812144	Florin	Unprocessed	Animals - Birds - Ardeidae - Ixobrychus exilis
Animals - Birds	Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-	-	3812144	Florin	Mapped and Unprocessed	Animals - Birds - Ardeidae - Nycticorax nycticorax
Animals - Birds	Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-	-	3812153	Carmichael	Unprocessed	Animals - Birds - Ardeidae - Nycticorax nycticorax
Animals - Birds	Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-	-	3812164	Rio Linda	Unprocessed	Animals - Birds - Ardeidae - Nycticorax nycticorax
Animals - Birds	Pica nuttalli	yellow-billed magpie	ABPAV09020	None	None	-	-	3812154	Sacramento East	Unprocessed	Animals - Birds - Corvidae - Pica nuttalli
Animals - Birds	Coccyzus americanus occidentalis	western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	-	-	3812154	Sacramento East	Mapped	Animals - Birds - Cuculidae - Coccyzus americanus occidentalis
Animals - Birds	Coccyzus americanus occidentalis	western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	-	-	3812164	Rio Linda	Mapped	Animals - Birds - Cuculidae - Coccyzus americanus occidentalis
Animals - Birds	Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	None	None	SSC	-	3812154	Sacramento East	Unprocessed	Animals - Birds - Emberizidae - Ammodramus savannarum

Animals - Birds	Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	None	None	SSC	-	3812144	Florin	Unprocessed	Animals - Birds - Emberizidae - Ammodramus savannarum
Animals - Birds	Chondestes grammacus	lark sparrow	ABPBX96010	None	None	-	-	3812154	Sacramento East	Unprocessed	Animals - Birds - Emberizidae - Chondestes grammacus
Animals - Birds	Melospiza melodia	song sparrow (-inModesto-in population)	ABPBXA3010	None	None	SSC	-	3812154	Sacramento East	Mapped	Animals - Birds - Emberizidae - Melospiza melodia
Animals - Birds	Melospiza melodia	song sparrow (-inModesto-in population)	ABPBXA3010	None	None	SSC	-	3812164	Rio Linda	Mapped	Animals - Birds - Emberizidae - Melospiza melodia
Animals - Birds	Melospiza melodia	song sparrow (-inModesto-in population)	ABPBXA3010	None	None	SSC	-	3812144	Florin	Mapped	Animals - Birds - Emberizidae - Melospiza melodia
Animals - Birds	Spizella breweri	Brewer's sparrow	ABPBX94040	None	None	-	-	3812154	Sacramento East	Unprocessed	Animals - Birds - Emberizidae - Spizella breweri
Animals - Birds	Falco columbarius	merlin	ABNKD06030	None	None	WL	-	3812162	Folsom	Mapped and Unprocessed	Animals - Birds - Falconidae - Falco columbarius
Animals - Birds	Falco columbarius	merlin	ABNKD06030	None	None	WL	-	3812144	Florin	Mapped	Animals - Birds - Falconidae - Falco columbarius
Animals - Birds	Falco columbarius	merlin	ABNKD06030	None	None	WL	-	3812152	Buffalo Creek	Unprocessed	Animals - Birds - Falconidae - Falco columbarius
Animals - Birds	Falco mexicanus	prairie falcon	ABNKD06090	None	None	WL	-	3812154	Sacramento East	Unprocessed	Animals - Birds - Falconidae - Falco mexicanus
Animals - Birds	Spinus lawrencei	Lawrence's goldfinch	ABPBY06100	None	None	-	-	3812162	Folsom	Unprocessed	Animals - Birds - Fringillidae - Spinus lawrencei
Animals - Birds	Spinus lawrencei	Lawrence's goldfinch	ABPBY06100	None	None	-	-	3812152	Buffalo Creek	Unprocessed	Animals - Birds - Fringillidae - Spinus lawrencei
Animals - Birds	Grus canadensis tabida	greater sandhill crane	ABNMK01014	None	Threatened	FP	-	3812144	Florin	Unprocessed	Animals - Birds - Gruidae - Grus canadensis tabida
Animals - Birds	Progne subis	purple martin	ABPAU01010	None	None	SSC	-	3812154	Sacramento East	Mapped and Unprocessed	Animals - Birds - Hirundinidae - Progne subis
Animals - Birds	Progne subis	purple martin	ABPAU01010	None	None	SSC	-	3812164	Rio Linda	Mapped and Unprocessed	Animals - Birds - Hirundinidae - Progne subis
Animals - Birds	Riparia riparia	bank swallow	ABPAU08010	None	Threatened	-	-	3812154	Sacramento East	Mapped	Animals - Birds - Hirundinidae - Riparia riparia
Animals - Birds	Riparia riparia	bank swallow	ABPAU08010	None	Threatened	-	-	3812163	Citrus Heights	Mapped	Animals - Birds - Hirundinidae - Riparia riparia
Animals - Birds	Riparia riparia	bank swallow	ABPAU08010	None	Threatened	-	-	3812142	Sloughhouse	Mapped and Unprocessed	Animals - Birds - Hirundinidae - Riparia riparia
Animals - Birds	Riparia riparia	bank swallow	ABPAU08010	None	Threatened	-	-	3812153	Carmichael	Mapped	Animals - Birds - Hirundinidae - Riparia riparia
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	None	SSC	-	3812153	Carmichael	Mapped and Unprocessed	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	None	SSC	-	3812152	Buffalo Creek	Mapped and Unprocessed	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	None	SSC	-	3812142	Sloughhouse	Mapped and Unprocessed	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	None	SSC	-	3812143	Elk Grove	Mapped and Unprocessed	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	None	SSC	-	3812144	Florin	Mapped and Unprocessed	Animals - Birds - Icteridae - Agelaius tricolor

Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	None	SSC	-	3812162	Folsom	Mapped	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	None	SSC	-	3812164	Rio Linda	Mapped	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Xanthocephalus xanthocephalus	yellow-headed blackbird	ABPBXB3010	None	None	SSC	-	3812144	Florin	Mapped	Animals - Birds - Icteridae - Xanthocephalus xanthocephalus
Animals - Birds	Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC	-	3812144	Florin	Unprocessed	Animals - Birds - Laniidae - Lanius ludovicianus
Animals - Birds	Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC	-	3812153	Carmichael	Unprocessed	Animals - Birds - Laniidae - Lanius ludovicianus
Animals - Birds	Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC	-	3812152	Buffalo Creek	Unprocessed	Animals - Birds - Laniidae - Lanius ludovicianus
Animals - Birds	Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC	-	3812164	Rio Linda	Unprocessed	Animals - Birds - Laniidae - Lanius ludovicianus
Animals - Birds	Sternula antillarum browni	California least tern	ABNNM08103	Endangered	Endangered	FP	-	3812144	Florin	Unprocessed	Animals - Birds - Laridae - Sternula antillarum browni
Animals - Birds	Baeolophus inornatus	oak titmouse	ABPAW01100	None	None	-	-	3812144	Florin	Unprocessed	Animals - Birds - Paridae - Baeolophus inornatus
Animals - Birds	Icteria virens	yellow-breasted chat	ABPBX24010	None	None	SSC	-	3812162	Folsom	Unprocessed	Animals - Birds - Parulidae - Icteria virens
Animals - Birds	Setophaga petechia	yellow warbler	ABPBX03010	None	None	SSC	-	3812162	Folsom	Unprocessed	Animals - Birds - Parulidae - Setophaga petechia
Animals - Birds	Phalacrocorax auritus	double-crested cormorant	ABNFD01020	None	None	WL	-	3812162	Folsom	Mapped and Unprocessed	Animals - Birds - Phalacrocoracidae - Phalacrocorax auritus
Animals - Birds	Phalacrocorax auritus	double-crested cormorant	ABNFD01020	None	None	WL	-	3812144	Florin	Mapped and Unprocessed	Animals - Birds - Phalacrocoracidae - Phalacrocorax auritus
Animals - Birds	Picoides nuttallii	Nuttall's woodpecker	ABNYF07020	None	None	-	-	3812144	Florin	Unprocessed	Animals - Birds - Picidae - Picoides nuttallii
Animals - Birds	Picoides nuttallii	Nuttall's woodpecker	ABNYF07020	None	None	-	-	3812152	Buffalo Creek	Unprocessed	Animals - Birds - Picidae - Picoides nuttallii
Animals - Birds	Picoides nuttallii	Nuttall's woodpecker	ABNYF07020	None	None	-	-	3812153	Carmichael	Unprocessed	Animals - Birds - Picidae - Picoides nuttallii
Animals - Birds	Athene cucularia	burrowing owl	ABNSB10010	None	None	SSC	-	3812153	Carmichael	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cucularia
Animals - Birds	Athene cucularia	burrowing owl	ABNSB10010	None	None	SSC	-	3812152	Buffalo Creek	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cucularia
Animals - Birds	Athene cucularia	burrowing owl	ABNSB10010	None	None	SSC	-	3812144	Florin	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cucularia
Animals - Birds	Athene cucularia	burrowing owl	ABNSB10010	None	None	SSC	-	3812143	Elk Grove	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cucularia
Animals - Birds	Athene cucularia	burrowing owl	ABNSB10010	None	None	SSC	-	3812142	Sloughhouse	Unprocessed	Animals - Birds - Strigidae - Athene cucularia
Animals - Birds	Athene cucularia	burrowing owl	ABNSB10010	None	None	SSC	-	3812154	Sacramento East	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cucularia
Animals - Birds	Athene cucularia	burrowing owl	ABNSB10010	None	None	SSC	-	3812164	Rio Linda	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cucularia

Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened	None	-	-	3812164	Rio Linda	Mapped	Animals - Crustaceans - Branchinectidae - Branchinecta lynchi
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened	None	-	-	3812154	Sacramento East	Mapped	Animals - Crustaceans - Branchinectidae - Branchinecta lynchi
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened	None	-	-	3812162	Folsom	Mapped	Animals - Crustaceans - Branchinectidae - Branchinecta lynchi
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened	None	-	-	3812142	Sloughhouse	Mapped and Unprocessed	Animals - Crustaceans - Branchinectidae - Branchinecta lynchi
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened	None	-	-	3812143	Elk Grove	Mapped and Unprocessed	Animals - Crustaceans - Branchinectidae - Branchinecta lynchi
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened	None	-	-	3812152	Buffalo Creek	Mapped and Unprocessed	Animals - Crustaceans - Branchinectidae - Branchinecta lynchi
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened	None	-	-	3812144	Florin	Mapped	Animals - Crustaceans - Branchinectidae - Branchinecta lynchi
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened	None	-	-	3812153	Carmichael	Mapped and Unprocessed	Animals - Crustaceans - Branchinectidae - Branchinecta lynchi
Animals - Crustaceans	Branchinecta mesovallensis	midvalley fairy shrimp	ICBRA03150	None	None	-	-	3812153	Carmichael	Mapped and Unprocessed	Animals - Crustaceans - Branchinectidae - Branchinecta mesovallensis
Animals - Crustaceans	Branchinecta mesovallensis	midvalley fairy shrimp	ICBRA03150	None	None	-	-	3812144	Florin	Mapped	Animals - Crustaceans - Branchinectidae - Branchinecta mesovallensis
Animals - Crustaceans	Branchinecta mesovallensis	midvalley fairy shrimp	ICBRA03150	None	None	-	-	3812152	Buffalo Creek	Mapped and Unprocessed	Animals - Crustaceans - Branchinectidae - Branchinecta mesovallensis
Animals - Crustaceans	Branchinecta mesovallensis	midvalley fairy shrimp	ICBRA03150	None	None	-	-	3812143	Elk Grove	Mapped and Unprocessed	Animals - Crustaceans - Branchinectidae - Branchinecta mesovallensis
Animals - Crustaceans	Branchinecta mesovallensis	midvalley fairy shrimp	ICBRA03150	None	None	-	-	3812142	Sloughhouse	Mapped	Animals - Crustaceans - Branchinectidae - Branchinecta mesovallensis
Animals - Crustaceans	Dumontia oregonensis	hairy water flea	ICBRA23010	None	None	-	-	3812152	Buffalo Creek	Mapped	Animals - Crustaceans - Dumontiidae - Dumontia oregonensis
Animals - Crustaceans	Dumontia oregonensis	hairy water flea	ICBRA23010	None	None	-	-	3812153	Carmichael	Mapped	Animals - Crustaceans - Dumontiidae - Dumontia oregonensis

Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3812153	Carmichael	Mapped and Unprocessed	Animals - Crustaceans - Linderiellidae - Linderiella occidentalis
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3812152	Buffalo Creek	Mapped and Unprocessed	Animals - Crustaceans - Linderiellidae - Linderiella occidentalis
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3812144	Florin	Mapped and Unprocessed	Animals - Crustaceans - Linderiellidae - Linderiella occidentalis
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3812142	Sloughhouse	Mapped and Unprocessed	Animals - Crustaceans - Linderiellidae - Linderiella occidentalis
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3812143	Elk Grove	Mapped and Unprocessed	Animals - Crustaceans - Linderiellidae - Linderiella occidentalis
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3812162	Folsom	Mapped and Unprocessed	Animals - Crustaceans - Linderiellidae - Linderiella occidentalis
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3812163	Citrus Heights	Mapped and Unprocessed	Animals - Crustaceans - Linderiellidae - Linderiella occidentalis
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3812154	Sacramento East	Mapped and Unprocessed	Animals - Crustaceans - Linderiellidae - Linderiella occidentalis
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3812164	Rio Linda	Mapped and Unprocessed	Animals - Crustaceans - Linderiellidae - Linderiella occidentalis
Animals - Crustaceans	Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	Endangered	None	-	-	3812164	Rio Linda	Mapped	Animals - Crustaceans - Triopsidae - Lepidurus packardi
Animals - Crustaceans	Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	Endangered	None	-	-	3812154	Sacramento East	Mapped	Animals - Crustaceans - Triopsidae - Lepidurus packardi
Animals - Crustaceans	Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	Endangered	None	-	-	3812162	Folsom	Mapped	Animals - Crustaceans - Triopsidae - Lepidurus packardi
Animals - Crustaceans	Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	Endangered	None	-	-	3812143	Elk Grove	Mapped and Unprocessed	Animals - Crustaceans - Triopsidae - Lepidurus packardi
Animals - Crustaceans	Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	Endangered	None	-	-	3812142	Sloughhouse	Mapped and Unprocessed	Animals - Crustaceans - Triopsidae - Lepidurus packardi
Animals - Crustaceans	Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	Endangered	None	-	-	3812144	Florin	Mapped	Animals - Crustaceans - Triopsidae - Lepidurus packardi

Animals - Crustaceans	Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	Endangered	None	-	-	3812152	Buffalo Creek	Mapped and Unprocessed	Animals - Crustaceans - Triopsidae - Lepidurus packardi
Animals - Crustaceans	Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	Endangered	None	-	-	3812153	Carmichael	Mapped and Unprocessed	Animals - Crustaceans - Triopsidae - Lepidurus packardi
Animals - Fish	Mylopharodon conocephalus	hardhead	AFCJB25010	None	None	SSC	-	3812154	Sacramento East	Unprocessed	Animals - Fish - Cyprinidae - Mylopharodon conocephalus
Animals - Fish	Pogonichthys macrolepidotus	Sacramento splittail	AFCJB34020	None	None	SSC	-	3812154	Sacramento East	Unprocessed	Animals - Fish - Cyprinidae - Pogonichthys macrolepidotus
Animals - Fish	Pogonichthys macrolepidotus	Sacramento splittail	AFCJB34020	None	None	SSC	-	3812144	Florin	Mapped	Animals - Fish - Cyprinidae - Pogonichthys macrolepidotus
Animals - Fish	Hysteroecarpus traski traski	Sacramento-San Joaquin tule perch	AFCQK02012	None	None	-	-	3812154	Sacramento East	Unprocessed	Animals - Fish - Embiotocidae - Hysteroecarpus traski traski
Animals - Fish	Hypomesus transpacificus	Delta smelt	AFCHB01040	Threatened	Endangered	-	-	3812154	Sacramento East	Unprocessed	Animals - Fish - Osmeridae - Hypomesus transpacificus
Animals - Fish	Spirinchus thaleichthys	longfin smelt	AFCHB03010	Candidate	Threatened	SSC	-	3812144	Florin	Mapped	Animals - Fish - Osmeridae - Spirinchus thaleichthys
Animals - Fish	Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC	-	3812154	Sacramento East	Unprocessed	Animals - Fish - Petromyzontidae - Entosphenus tridentatus
Animals - Fish	Lampetra ayresii	river lamprey	AFBAA02030	None	None	SSC	-	3812154	Sacramento East	Unprocessed	Animals - Fish - Petromyzontidae - Lampetra ayresii
Animals - Fish	Oncorhynchus mykiss irideus	steelhead - central California coast DPS	AFCHA0209G	Threatened	None	-	-	3812154	Sacramento East	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus
Animals - Fish	Oncorhynchus mykiss irideus	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812154	Sacramento East	Mapped	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus
Animals - Fish	Oncorhynchus mykiss irideus	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812163	Citrus Heights	Mapped	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus
Animals - Fish	Oncorhynchus mykiss irideus	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812162	Folsom	Mapped	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus
Animals - Fish	Oncorhynchus mykiss irideus	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812164	Rio Linda	Mapped	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus
Animals - Fish	Oncorhynchus mykiss irideus	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812144	Florin	Mapped	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus
Animals - Fish	Oncorhynchus mykiss irideus	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812142	Sloughhouse	Mapped	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus
Animals - Fish	Oncorhynchus mykiss irideus	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812143	Elk Grove	Mapped	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus
Animals - Fish	Oncorhynchus mykiss irideus	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3812153	Carmichael	Mapped	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus



Animals - Fish	Oncorhynchus tshawytscha	chinook salmon - Central Valley spring-run ESU	AFCHA0205A	Threatened	Threatened	-	-	3812154	Sacramento East	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha
Animals - Fish	Oncorhynchus tshawytscha	chinook salmon - Sacramento River winter-run ESU	AFCHA0205B	Endangered	Endangered	-	-	3812154	Sacramento East	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha
Animals - Fish	Oncorhynchus tshawytscha	chinook salmon - Central Valley fall / late fall-run ESU	AFCHA0205N	None	None	SSC	-	3812154	Sacramento East	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha
Animals - Insects	Andrena blennospermatis	Blennosperma vernal pool andrenid bee	IIHYM35030	None	None	-	-	3812142	Sloughhouse	Mapped	Animals - Insects - Andrenidae - Andrena blennospermatis
Animals - Insects	Andrena subapasta	an andrenid bee	IIHYM35210	None	None	-	-	3812163	Citrus Heights	Mapped	Animals - Insects - Andrenidae - Andrena subapasta
Animals - Insects	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	Threatened	None	-	-	3812154	Sacramento East	Mapped and Unprocessed	Animals - Insects - Cerambycidae - Desmocerus californicus dimorphus
Animals - Insects	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	Threatened	None	-	-	3812163	Citrus Heights	Mapped and Unprocessed	Animals - Insects - Cerambycidae - Desmocerus californicus dimorphus
Animals - Insects	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	Threatened	None	-	-	3812162	Folsom	Mapped and Unprocessed	Animals - Insects - Cerambycidae - Desmocerus californicus dimorphus
Animals - Insects	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	Threatened	None	-	-	3812142	Sloughhouse	Mapped	Animals - Insects - Cerambycidae - Desmocerus californicus dimorphus
Animals - Insects	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	Threatened	None	-	-	3812143	Elk Grove	Mapped	Animals - Insects - Cerambycidae - Desmocerus californicus dimorphus
Animals - Insects	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	Threatened	None	-	-	3812153	Carmichael	Mapped and Unprocessed	Animals - Insects - Cerambycidae - Desmocerus californicus dimorphus
Animals - Insects	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	Threatened	None	-	-	3812152	Buffalo Creek	Mapped	Animals - Insects - Cerambycidae - Desmocerus californicus dimorphus
Animals - Insects	Hydrochara rickseckeri	Ricksecker's water scavenger beetle	IICOL5V010	None	None	-	-	3812152	Buffalo Creek	Mapped	Animals - Insects - Hydrophilidae - Hydrochara rickseckeri
Animals - Insects	Hydrochara rickseckeri	Ricksecker's water scavenger beetle	IICOL5V010	None	None	-	-	3812153	Carmichael	Mapped	Animals - Insects - Hydrophilidae - Hydrochara rickseckeri
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3812153	Carmichael	Mapped	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3812152	Buffalo Creek	Mapped and Unprocessed	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3812144	Florin	Mapped and Unprocessed	Animals - Mammals - Mustelidae - Taxidea taxus

Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3812162	Folsom	Mapped and Unprocessed	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3812154	Sacramento East	Mapped	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3812162	Folsom	Mapped	Animals - Mammals - Vespertilionidae - Antrozous pallidus
Animals - Mammals	Lasionycteris noctivagans	silver-haired bat	AMACC02010	None	None	-	-	3812162	Folsom	Mapped	Animals - Mammals - Vespertilionidae - Lasionycteris noctivagans
Animals - Mammals	Lasiurus blossevillii	western red bat	AMACC05060	None	None	SSC	-	3812144	Florin	Unprocessed	Animals - Mammals - Vespertilionidae - Lasiurus blossevillii
Animals - Mammals	Lasiurus cinereus	hoary bat	AMACC05030	None	None	-	-	3812144	Florin	Unprocessed	Animals - Mammals - Vespertilionidae - Lasiurus cinereus
Animals - Mammals	Myotis lucifugus	little brown bat	AMACC01010	None	None	-	-	3812144	Florin	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis lucifugus
Animals - Mammals	Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-	-	3812144	Florin	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis yumanensis
Animals - Mollusks	Gonidea angulata	western ridged mussel	IMBIV19010	None	None	-	-	3812143	Elk Grove	Unprocessed	Animals - Mollusks - Unionidae - Gonidea angulata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812143	Elk Grove	Mapped	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812142	Sloughhouse	Mapped	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812144	Florin	Mapped	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812152	Buffalo Creek	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812153	Carmichael	Mapped	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812162	Folsom	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812154	Sacramento East	Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812164	Rio Linda	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Thamnophis gigas	giant garter snake	ARADB36150	Threatened	Threatened	-	-	3812164	Rio Linda	Mapped	Animals - Reptiles - Natricidae - Thamnophis gigas
Animals - Reptiles	Thamnophis gigas	giant garter snake	ARADB36150	Threatened	Threatened	-	-	3812144	Florin	Mapped	Animals - Reptiles - Natricidae - Thamnophis gigas
Animals - Reptiles	Thamnophis gigas	giant garter snake	ARADB36150	Threatened	Threatened	-	-	3812143	Elk Grove	Mapped	Animals - Reptiles - Natricidae - Thamnophis gigas
Community - Terrestrial	Elderberry Savanna	Elderberry Savanna	CTT63440CA	None	None	-	-	3812154	Sacramento East	Mapped	Community - Terrestrial - Elderberry Savanna

Community - Terrestrial	Great Valley Valley Oak Riparian Forest	Great Valley Valley Oak Riparian Forest	CTT61430CA	None	None	-	-	3812143	Elk Grove	Mapped	Community - Terrestrial - Great Valley Valley Oak Riparian Forest
Community - Terrestrial	Northern Claypan Vernal Pool	Northern Claypan Vernal Pool	CTT44120CA	None	None	-	-	3812164	Rio Linda	Mapped	Community - Terrestrial - Northern Claypan Vernal Pool
Community - Terrestrial	Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	CTT44110CA	None	None	-	-	3812164	Rio Linda	Mapped	Community - Terrestrial - Northern Hardpan Vernal Pool
Community - Terrestrial	Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	CTT44110CA	None	None	-	-	3812162	Folsom	Mapped	Community - Terrestrial - Northern Hardpan Vernal Pool
Community - Terrestrial	Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	CTT44110CA	None	None	-	-	3812144	Florin	Mapped	Community - Terrestrial - Northern Hardpan Vernal Pool
Community - Terrestrial	Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	CTT44110CA	None	None	-	-	3812143	Elk Grove	Mapped	Community - Terrestrial - Northern Hardpan Vernal Pool
Community - Terrestrial	Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	CTT44110CA	None	None	-	-	3812142	Sloughhouse	Mapped	Community - Terrestrial - Northern Hardpan Vernal Pool
Community - Terrestrial	Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	CTT44110CA	None	None	-	-	3812153	Carmichael	Mapped	Community - Terrestrial - Northern Hardpan Vernal Pool
Community - Terrestrial	Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	CTT44110CA	None	None	-	-	3812152	Buffalo Creek	Mapped	Community - Terrestrial - Northern Hardpan Vernal Pool
Community - Terrestrial	Northern Volcanic Mud Flow Vernal Pool	Northern Volcanic Mud Flow Vernal Pool	CTT44132CA	None	None	-	-	3812162	Folsom	Mapped	Community - Terrestrial - Northern Volcanic Mud Flow Vernal Pool
Community - Terrestrial	Northern Volcanic Mud Flow Vernal Pool	Northern Volcanic Mud Flow Vernal Pool	CTT44132CA	None	None	-	-	3812163	Citrus Heights	Mapped	Community - Terrestrial - Northern Volcanic Mud Flow Vernal Pool
Community - Terrestrial	Valley Needlegrass Grassland	Valley Needlegrass Grassland	CTT42110CA	None	None	-	-	3812162	Folsom	Mapped	Community - Terrestrial - Valley Needlegrass Grassland
Plants - Vascular	Sagittaria sanfordii	Sanford's arrowhead	PMALI040Q0	None	None	-	1B.2	3812154	Sacramento East	Mapped and Unprocessed	Plants - Vascular - Alismataceae - Sagittaria sanfordii
Plants - Vascular	Sagittaria sanfordii	Sanford's arrowhead	PMALI040Q0	None	None	-	1B.2	3812163	Citrus Heights	Mapped	Plants - Vascular - Alismataceae - Sagittaria sanfordii
Plants - Vascular	Sagittaria sanfordii	Sanford's arrowhead	PMALI040Q0	None	None	-	1B.2	3812164	Rio Linda	Mapped	Plants - Vascular - Alismataceae - Sagittaria sanfordii
Plants - Vascular	Sagittaria sanfordii	Sanford's arrowhead	PMALI040Q0	None	None	-	1B.2	3812144	Florin	Mapped and Unprocessed	Plants - Vascular - Alismataceae - Sagittaria sanfordii
Plants - Vascular	Sagittaria sanfordii	Sanford's arrowhead	PMALI040Q0	None	None	-	1B.2	3812153	Carmichael	Mapped and Unprocessed	Plants - Vascular - Alismataceae - Sagittaria sanfordii
Plants - Vascular	Sagittaria sanfordii	Sanford's arrowhead	PMALI040Q0	None	None	-	1B.2	3812142	Sloughhouse	Mapped	Plants - Vascular - Alismataceae - Sagittaria sanfordii
Plants - Vascular	Sagittaria sanfordii	Sanford's arrowhead	PMALI040Q0	None	None	-	1B.2	3812143	Elk Grove	Mapped	Plants - Vascular - Alismataceae - Sagittaria sanfordii
Plants - Vascular	Centromadia parryi ssp. rudis	Parry's rough tarplant	PDAST4R0P3	None	None	-	4.2	3812144	Florin	Unprocessed	Plants - Vascular - Asteraceae - Centromadia parryi ssp. rudis

Plants - Vascular	Hesperex caulescens	hogwallow starfish	PDASTE5020	None	None	-	4.2	3812144	Florin	Unprocessed	Plants - Vascular - Asteraceae - Hesperex caulescens
Plants - Vascular	Hesperex caulescens	hogwallow starfish	PDASTE5020	None	None	-	4.2	3812152	Buffalo Creek	Unprocessed	Plants - Vascular - Asteraceae - Hesperex caulescens
Plants - Vascular	Lepidium latipes var. heckardii	Heckard's pepper-grass	PDBRA1M0K1	None	None	-	1B.2	3812144	Florin	Mapped	Plants - Vascular - Brassicaceae - Lepidium latipes var. heckardii
Plants - Vascular	Downingia pusilla	dwarf downingia	PDCAM060C0	None	None	-	2B.2	3812144	Florin	Mapped	Plants - Vascular - Campanulaceae - Downingia pusilla
Plants - Vascular	Downingia pusilla	dwarf downingia	PDCAM060C0	None	None	-	2B.2	3812143	Elk Grove	Mapped	Plants - Vascular - Campanulaceae - Downingia pusilla
Plants - Vascular	Downingia pusilla	dwarf downingia	PDCAM060C0	None	None	-	2B.2	3812164	Rio Linda	Mapped	Plants - Vascular - Campanulaceae - Downingia pusilla
Plants - Vascular	Downingia pusilla	dwarf downingia	PDCAM060C0	None	None	-	2B.2	3812162	Folsom	Mapped	Plants - Vascular - Campanulaceae - Downingia pusilla
Plants - Vascular	Legenere limosa	legenere	PDCAM0C010	None	None	-	1B.1	3812164	Rio Linda	Mapped	Plants - Vascular - Campanulaceae - Legenere limosa
Plants - Vascular	Legenere limosa	legenere	PDCAM0C010	None	None	-	1B.1	3812143	Elk Grove	Mapped	Plants - Vascular - Campanulaceae - Legenere limosa
Plants - Vascular	Legenere limosa	legenere	PDCAM0C010	None	None	-	1B.1	3812142	Sloughhouse	Mapped	Plants - Vascular - Campanulaceae - Legenere limosa
Plants - Vascular	Legenere limosa	legenere	PDCAM0C010	None	None	-	1B.1	3812144	Florin	Mapped	Plants - Vascular - Campanulaceae - Legenere limosa
Plants - Vascular	Legenere limosa	legenere	PDCAM0C010	None	None	-	1B.1	3812152	Buffalo Creek	Mapped and Unprocessed	Plants - Vascular - Campanulaceae - Legenere limosa
Plants - Vascular	Legenere limosa	legenere	PDCAM0C010	None	None	-	1B.1	3812153	Carmichael	Mapped	Plants - Vascular - Campanulaceae - Legenere limosa
Plants - Vascular	Cuscuta obtusiflora var. glandulosa	Peruvian dodder	PDCUS01111	None	None	-	2B.2	3812144	Florin	Mapped	Plants - Vascular - Cuscutaceae - Cuscuta obtusiflora var. glandulosa
Plants - Vascular	Trifolium hydrophilum	saline clover	PDFAB400R5	None	None	-	1B.2	3812144	Florin	Mapped	Plants - Vascular - Fabaceae - Trifolium hydrophilum
Plants - Vascular	Juglans hindsii	Northern California black walnut	PDJUG02040	None	None	-	1B.1	3812144	Florin	Mapped	Plants - Vascular - Juglandaceae - Juglans hindsii
Plants - Vascular	Juncus leiospermus var. ahartii	Ahart's dwarf rush	PMJUN011L1	None	None	-	1B.2	3812153	Carmichael	Mapped	Plants - Vascular - Juncaceae - Juncus leiospermus var. ahartii
Plants - Vascular	Juncus leiospermus var. ahartii	Ahart's dwarf rush	PMJUN011L1	None	None	-	1B.2	3812152	Buffalo Creek	Mapped	Plants - Vascular - Juncaceae - Juncus leiospermus var. ahartii
Plants - Vascular	Fritillaria agrestis	stinkbells	PMLIL0V010	None	None	-	4.2	3812142	Sloughhouse	Unprocessed	Plants - Vascular - Liliaceae - Fritillaria agrestis
Plants - Vascular	Fritillaria agrestis	stinkbells	PMLIL0V010	None	None	-	4.2	3812164	Rio Linda	Mapped and Unprocessed	Plants - Vascular - Liliaceae - Fritillaria agrestis
Plants - Vascular	Fritillaria agrestis	stinkbells	PMLIL0V010	None	None	-	4.2	3812163	Citrus Heights	Mapped and Unprocessed	Plants - Vascular - Liliaceae - Fritillaria agrestis

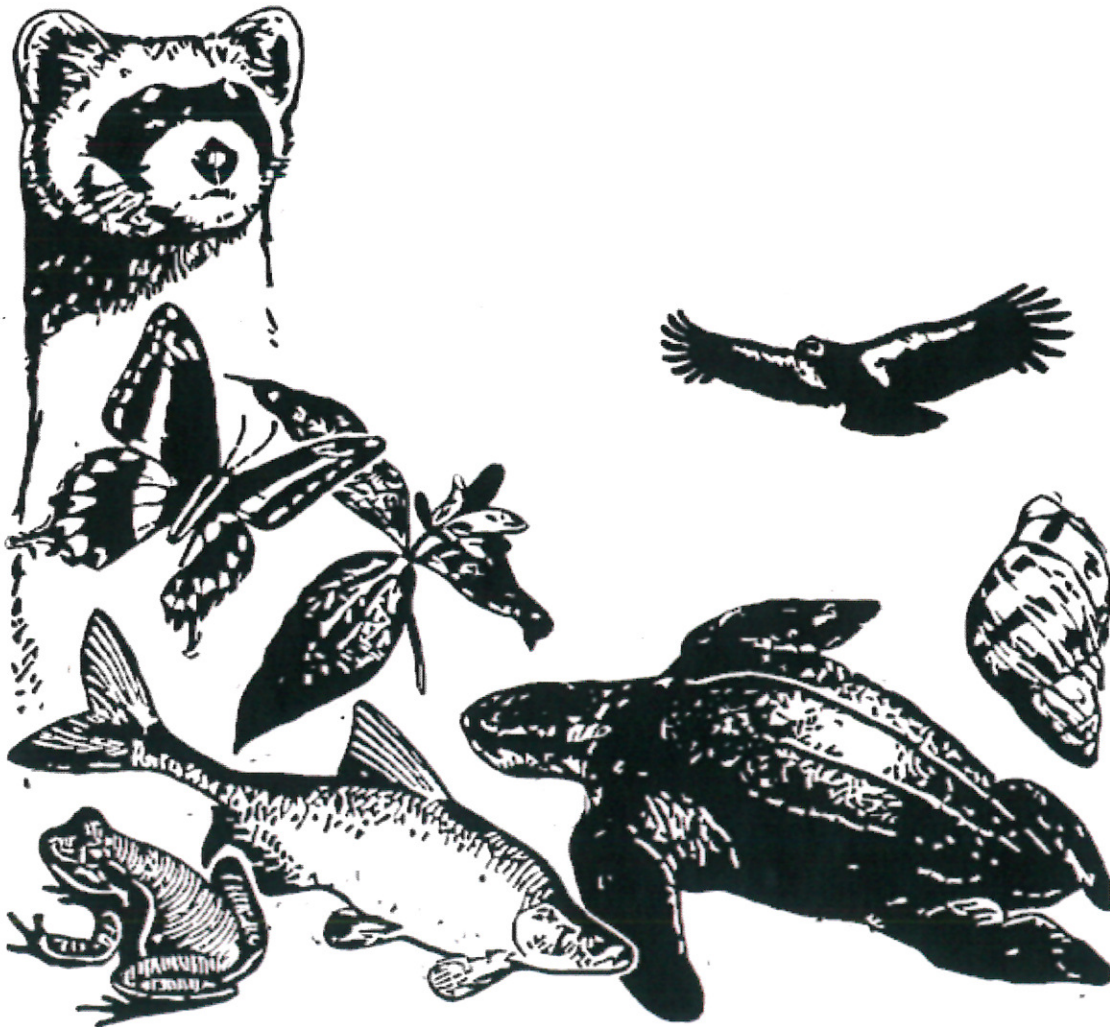
Plants - Vascular	<i>Fritillaria agrestis</i>	stinkbells	PMLIL0V010	None	None	-	4.2	3812162	Folsom	Unprocessed	Plants - Vascular - Liliaceae - <i>Fritillaria agrestis</i>
Plants - Vascular	<i>Fritillaria agrestis</i>	stinkbells	PMLIL0V010	None	None	-	4.2	3812154	Sacramento East	Unprocessed	Plants - Vascular - Liliaceae - <i>Fritillaria agrestis</i>
Plants - Vascular	<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	wooly rose-mallow	PDMAL0H0R3	None	None	-	1B.2	3812144	Florin	Mapped	Plants - Vascular - Malvaceae - <i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>
Plants - Vascular	<i>Clarkia biloba</i> ssp. <i>brandegeae</i>	Brandegee's clarkia	PDONA05053	None	None	-	4.2	3812162	Folsom	Mapped and Unprocessed	Plants - Vascular - Onagraceae - <i>Clarkia biloba</i> ssp. <i>brandegeae</i>
Plants - Vascular	<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	PDSCR0R060	None	Endangered	-	1B.2	3812164	Rio Linda	Mapped	Plants - Vascular - Plantaginaceae - <i>Gratiola heterosepala</i>
Plants - Vascular	<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	PDSCR0R060	None	Endangered	-	1B.2	3812152	Buffalo Creek	Mapped	Plants - Vascular - Plantaginaceae - <i>Gratiola heterosepala</i>
Plants - Vascular	<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	PDSCR0R060	None	Endangered	-	1B.2	3812153	Carmichael	Mapped	Plants - Vascular - Plantaginaceae - <i>Gratiola heterosepala</i>
Plants - Vascular	<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	PDSCR0R060	None	Endangered	-	1B.2	3812142	Sloughhouse	Mapped	Plants - Vascular - Plantaginaceae - <i>Gratiola heterosepala</i>
Plants - Vascular	<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	PDSCR0R060	None	Endangered	-	1B.2	3812143	Elk Grove	Mapped	Plants - Vascular - Plantaginaceae - <i>Gratiola heterosepala</i>
Plants - Vascular	<i>Orcuttia tenuis</i>	slender Orcutt grass	PMPOA4G050	Threatened	Endangered	-	1B.1	3812143	Elk Grove	Mapped	Plants - Vascular - Poaceae - <i>Orcuttia tenuis</i>
Plants - Vascular	<i>Orcuttia tenuis</i>	slender Orcutt grass	PMPOA4G050	Threatened	Endangered	-	1B.1	3812152	Buffalo Creek	Mapped	Plants - Vascular - Poaceae - <i>Orcuttia tenuis</i>
Plants - Vascular	<i>Orcuttia viscida</i>	Sacramento Orcutt grass	PMPOA4G070	Endangered	Endangered	-	1B.1	3812152	Buffalo Creek	Mapped	Plants - Vascular - Poaceae - <i>Orcuttia viscida</i>
Plants - Vascular	<i>Orcuttia viscida</i>	Sacramento Orcutt grass	PMPOA4G070	Endangered	Endangered	-	1B.1	3812153	Carmichael	Mapped	Plants - Vascular - Poaceae - <i>Orcuttia viscida</i>
Plants - Vascular	<i>Orcuttia viscida</i>	Sacramento Orcutt grass	PMPOA4G070	Endangered	Endangered	-	1B.1	3812143	Elk Grove	Mapped	Plants - Vascular - Poaceae - <i>Orcuttia viscida</i>
Plants - Vascular	<i>Orcuttia viscida</i>	Sacramento Orcutt grass	PMPOA4G070	Endangered	Endangered	-	1B.1	3812162	Folsom	Mapped	Plants - Vascular - Poaceae - <i>Orcuttia viscida</i>
Plants - Vascular	<i>Navarretia eriocephala</i>	hoary navarretia	PDPLM0C060	None	None	-	4.3	3812143	Elk Grove	Unprocessed	Plants - Vascular - Polemoniaceae - <i>Navarretia eriocephala</i>
Plants - Vascular	<i>Navarretia myersii</i> ssp. <i>myersii</i>	pincushion navarretia	PDPLM0C0X1	None	None	-	1B.1	3812162	Folsom	Mapped and Unprocessed	Plants - Vascular - Polemoniaceae - <i>Navarretia myersii</i> ssp. <i>myersii</i>

# Kilgore Road

## *IPaC Trust Resources Report*

Generated April 26, 2016 10:54 AM MDT, IPaC v3.0.2

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.



# Table of Contents

IPaC Trust Resources Report .....	<u>1</u>
Project Description .....	<u>1</u>
Endangered Species .....	<u>2</u>
Migratory Birds .....	<u>5</u>
Refuges & Hatcheries .....	<u>8</u>
Wetlands .....	<u>9</u>

U.S. Fish & Wildlife Service

# IPaC Trust Resources Report



NAME

Kilgore Road

LOCATION

Sacramento County, California

IPAC LINK

<https://ecos.fws.gov/ipac/project/>

[EOJ42-YOCLN-BJ5K6-3QDTB-53YDFI](#)



## U.S. Fish & Wildlife Service Contact Information

Trust resources in this location are managed by:

### **Sacramento Fish And Wildlife Office**

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600



## Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the [Endangered Species Program](#) of the U.S. Fish & Wildlife Service.

**This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.**

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

[Section 7](#) of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

**A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list either from the Regulatory Documents section in IPaC or from the local field office directly.**

The list of species below are those that may occur or could potentially be affected by activities in this location:

### Amphibians

**California Red-legged Frog** *Rana draytonii* Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?sPCODE=D02D](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=D02D)

**California Tiger Salamander** *Ambystoma californiense* Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?sPCODE=D01T](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=D01T)

## Crustaceans

**Conservancy Fairy Shrimp** *Branchinecta conservatio* Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?sPCODE=K03D](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=K03D)

**Vernal Pool Fairy Shrimp** *Branchinecta lynchi* Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?sPCODE=K03G](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=K03G)

**Vernal Pool Tadpole Shrimp** *Lepidurus packardii* Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?sPCODE=K048](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=K048)

## Fishes

**Delta Smelt** *Hypomesus transpacificus* Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?sPCODE=E070](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=E070)

**Steelhead** *Oncorhynchus (=Salmo) mykiss* Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?sPCODE=E08D](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=E08D)

## Flowering Plants

**Sacramento Orcutt Grass** *Orcuttia viscida* Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?sPCODE=Q1ZQ](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=Q1ZQ)

**Slender Orcutt Grass** *Orcuttia tenuis* Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?sPCODE=Q1AZ](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=Q1AZ)

## Insects

**Valley Elderberry Longhorn Beetle** *Desmocerus californicus dimorphus* — Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?sPCODE=I01L](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=I01L)

## Reptiles

**Giant Garter Snake** *Thamnophis gigas* — Threatened

CRITICAL HABITAT

**No critical habitat** has been designated for this species.

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?sPCODE=C057](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=C057)

## Critical Habitats

**There are no critical habitats in this location**

# Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the [Bald and Golden Eagle Protection Act](#).

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish & Wildlife Service.<sup>[1]</sup> There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

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1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern  
<http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Conservation measures for birds  
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Year-round bird occurrence data  
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/akn-histogram-tools.php>

The following species of migratory birds could potentially be affected by activities in this location:

<b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i>	Bird of conservation concern
Year-round <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?scode=B008">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?scode=B008</a>	
<b>Black Rail</b> <i>Laterallus jamaicensis</i>	Bird of conservation concern
Season: Breeding <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?scode=B09A">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?scode=B09A</a>	
<b>Burrowing Owl</b> <i>Athene cunicularia</i>	Bird of conservation concern
Year-round <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?scode=B0NC">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?scode=B0NC</a>	
<b>Fox Sparrow</b> <i>Passerella iliaca</i>	Bird of conservation concern
Year-round	

<b>Lewis's Woodpecker</b> <i>Melanerpes lewis</i> Season: Wintering <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HQ">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HQ</a>	Bird of conservation concern
<b>Loggerhead Shrike</b> <i>Lanius ludovicianus</i> Year-round <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0FY">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0FY</a>	Bird of conservation concern
<b>Long-billed Curlew</b> <i>Numenius americanus</i> Season: Wintering <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B06S">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B06S</a>	Bird of conservation concern
<b>Marbled Godwit</b> <i>Limosa fedoa</i> Season: Wintering <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0JL">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0JL</a>	Bird of conservation concern
<b>Mountain Plover</b> <i>Charadrius montanus</i> Season: Wintering <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B078">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B078</a>	Bird of conservation concern
<b>Nuttall's Woodpecker</b> <i>Picoides nuttallii</i> Year-round <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HT">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HT</a>	Bird of conservation concern
<b>Oak Titmouse</b> <i>Baeolophus inornatus</i> Year-round <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0MJ">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0MJ</a>	Bird of conservation concern
<b>Peregrine Falcon</b> <i>Falco peregrinus</i> Season: Wintering <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0FU">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0FU</a>	Bird of conservation concern
<b>Short-eared Owl</b> <i>Asio flammeus</i> Season: Wintering <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HD">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HD</a>	Bird of conservation concern
<b>Snowy Plover</b> <i>Charadrius alexandrinus</i> Season: Breeding	Bird of conservation concern
<b>Swainson's Hawk</b> <i>Buteo swainsoni</i> Season: Breeding <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B070">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B070</a>	Bird of conservation concern
<b>Tricolored Blackbird</b> <i>Agelaius tricolor</i> Year-round <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B06P">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B06P</a>	Bird of conservation concern
<b>Western Grebe</b> <i>aechmophorus occidentalis</i> Year-round <a href="http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0EA">http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0EA</a>	Bird of conservation concern

**Williamson's Sapsucker** *Sphyrapicus thyroideus*

Year-round

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?spcode=B0FX](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FX)

Bird of conservation concern

**Yellow-billed Magpie** *Pica nuttalli*

Year-round

[http://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?spcode=B0N8](http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0N8)

Bird of conservation concern

## Wildlife refuges and fish hatcheries

**There are no refuges or fish hatcheries in this location**

# Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

## DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

## DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

## DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

**There are no wetlands in this location**



# CNPS *California Native Plant* Rare and Endangered Plant Inventory

## Plant List

18 matches found. *Click on scientific name for details*

### Search Criteria

Found in 9 Quads around 38121E3

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
<a href="#">Centromadia parryi ssp. rudis</a>	Parry's rough tarplant	Asteraceae	annual herb	4.2	S3	G3T3
<a href="#">Clarkia biloba ssp. brandegeae</a>	Brandegee's clarkia	Onagraceae	annual herb	4.2	S4	G4G5T4
<a href="#">Cuscuta obtusiflora var. glandulosa</a>	Peruvian dodder	Convolvulaceae	annual vine (parasitic)	2B.2	SH	G5T4T5
<a href="#">Downingia pusilla</a>	dwarf downingia	Campanulaceae	annual herb	2B.2	S2	GU
<a href="#">Fritillaria agrestis</a>	stinkbells	Liliaceae	perennial bulbiferous herb	4.2	S3	G3
<a href="#">Gratiola heterosepala</a>	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	1B.2	S2	G2
<a href="#">Hesperervax caulescens</a>	hogwallow starfish	Asteraceae	annual herb	4.2	S3	G3
<a href="#">Hibiscus lasiocarpus var. occidentalis</a>	woolly rose-mallow	Malvaceae	perennial rhizomatous herb	1B.2	S2	G5T2
<a href="#">Juglans hindsii</a>	Northern California black walnut	Juglandaceae	perennial deciduous tree	1B.1	S1	G1
<a href="#">Juncus leiospermus var. ahartii</a>	Ahart's dwarf rush	Juncaceae	annual herb	1B.2	S1	G2T1
<a href="#">Legenere limosa</a>	legenere	Campanulaceae	annual herb	1B.1	S2	G2
<a href="#">Lepidium latipes var. heckardii</a>	Heckard's pepper-grass	Brassicaceae	annual herb	1B.2	S2	G4T2
<a href="#">Navarretia eriocephala</a>	hoary navarretia	Polemoniaceae	annual herb	4.3	S4	G4
<a href="#">Navarretia myersii ssp. myersii</a>	pincushion navarretia	Polemoniaceae	annual herb	1B.1	S2	G2T2
<a href="#">Orcuttia tenuis</a>	slender Orcutt grass	Poaceae	annual herb	1B.1	S2	G2
<a href="#">Orcuttia viscida</a>	Sacramento Orcutt grass	Poaceae	annual herb	1B.1	S1	G1
<a href="#">Sagittaria sanfordii</a>	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb	1B.2	S3	G3
<a href="#">Trifolium hydrophilum</a>	saline clover	Fabaceae	annual herb	1B.2	S2	G2

### Suggested Citation

CNPS, Rare Plant Program. 2016. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website <http://www.rareplants.cnps.org> [accessed 29 April 2016].

**Search the Inventory**[Simple Search](#)[Advanced Search](#)[Glossary](#)**Information**[About the Inventory](#)[About the Rare Plant Program](#)[CNPS Home Page](#)[About CNPS](#)[Join CNPS](#)**Contributors**[The Calflora Database](#)[The California Lichen Society](#)

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## **APPENDIX E – TRIBAL CONSULTATION**



May 9, 2016

Gene Whitehouse  
Chairman  
United Auburn Indian Community of the Auburn Rancheria  
10720 Indian Hill Road  
Auburn, CA 95603

**Subject: Invitation to begin Assembly Bill 52 Consultation on the Kilgore Soccer Field Complex Project, Sacramento County, Rancho Cordova, California.**

Dear Mr. Gene Whitehouse,

In response to your request for Assembly Bill (AB) 52 consultation, the City of Rancho Cordova (City) is requesting the initiation of AB 52 consultation on the Kilgore Road Soccer Field Complex, Sacramento County, Rancho Cordova, California (Project). The City received an application in late 2015 and the application was complete in February of 2016. However, the CEQA document (Mitigated Negative Declaration) has only recently been started due to funding issues and coordination efforts with the California Department of Toxic Substances Control.

The applicant proposes to construct 3 (lighted) soccer fields (2 synthetic/1 grass). There will be 250 on site parking spaces and 1 prefabricated single-story concession building. A concrete cap is located on the northern end of the site which was installed as part of a remedial action plan approved by the California Department of Toxic Substances Control. Due to the past hazardous materials issues on the site and the presence of the concrete cap, uses on the site are limited in nature and ground disturbance must be minimal and approved by the California Department of Toxic Substance Control.

The proposed Project site is located at 3151 and 3181 Kilgore Road in the City of Rancho Cordova (APN: 072-0260-031 and 072-0260-032). Please see the attached Figures 1-3 that depict the Project Location and Vicinity, Project Area, and Aerial.

You are a traditionally and culturally affiliated California Native American tribal representative that has requested notice of projects where AB 52 applies within the City. We are requesting any information that you may have regarding tribal cultural resources (as defined by, Public Resources Code 21074) within the Project Area so that this information can be incorporated into the planning phase of the Project. The City, as the lead agency, pursuant to AB 52, is requesting input from Gene Whitehouse, Chairman, United Auburn Indian Community of the Auburn Rancheria, within 30 days of the date of this letter.

Your comments and concerns are important to us and we look forward to hearing from you. If you have any questions or comments regarding the project, I can be contacted via email (bsampson@cityofranhocordova.org) or by phone (916-851-8758).

Sincerely,



Bret E. Sampson  
Environmental Coordinator  
City of Rancho Cordova  
Planning Department  
2729 Prospect Park Drive  
Rancho Cordova, CA 95670  
916-851-8758

Enclosures:

Figure 1: Project Location and Vicinity

Figure 2: Project Area

Figure 3: Aerial

CC: Jason Camp, Tribal Historic Preservation Officer  
Marcos Guerrero, Cultural Resources Manager

May 9, 2016

Randy Yonemura  
Cultural Committee Chair  
Ione Band of Miwok Indians  
9252 Bush Street, Suite 2  
Plymouth, CA 95669

**Subject: Invitation to begin Assembly Bill 52 Consultation on the Kilgore Soccer Field Complex Project, Sacramento County, Rancho Cordova, California.**

Dear Mr. Randy Yonemura,

In response to your request for Assembly Bill (AB) 52 consultation, the City of Rancho Cordova (City) is requesting the initiation of AB 52 consultation on the Kilgore Road Soccer Field Complex, Sacramento County, Rancho Cordova, California (Project). The City received an application in late 2015 and the application was complete in February of 2016. However, the CEQA document (Mitigated Negative Declaration) has only recently been started due to funding issues and coordination efforts with the California Department of Toxic Substances Control.

The applicant proposes to construct 3 (lighted) soccer fields (2 synthetic/1 grass). There will be 250 on site parking spaces and 1 prefabricated single-story concession building. A concrete cap is located on the northern end of the site which was installed as part of a remedial action plan approved by the California Department of Toxic Substances Control. Due to the past hazardous materials issues on the site and the presence of the concrete cap, uses on the site are limited in nature and ground disturbance must be minimal and approved by the California Department of Toxic Substance Control.

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Your comments and concerns are important to us and we look forward to hearing from you. If you have any questions or comments regarding the project, I can be contacted via email (bsampson@cityofranhocordova.org) or by phone (916-851-8758).

Sincerely,



Bret E. Sampson  
Environmental Coordinator  
City of Rancho Cordova  
Planning Department  
2729 Prospect Park Drive  
Rancho Cordova, CA 95670  
916-851-8758

Enclosures:

Figure 1: Project Location and Vicinity

Figure 2: Project Area

Figure 3: Aerial



May 9, 2016

Steven Hutchason  
Executive Director  
Environmental Resources Department  
Wilton Rancheria  
9728 Kent Street  
Elk Grove, CA 95624

**Subject: Invitation to begin Assembly Bill 52 Consultation on the Kilgore Soccer Field Complex Project, Sacramento County, Rancho Cordova, California.**

Dear Mr. Steven Hutchason,

In response to your request for Assembly Bill (AB) 52 consultation, the City of Rancho Cordova (City) is requesting the initiation of AB 52 consultation on the Kilgore Road Soccer Field Complex, Sacramento County, Rancho Cordova, California (Project). The City received an application in late 2015 and the application was complete in February of 2016. However, the CEQA document (Mitigated Negative Declaration) has only recently been started due to funding issues and coordination efforts with the California Department of Toxic Substances Control.

The applicant proposes to construct 3 (lighted) soccer fields (2 synthetic/1 grass). There will be 250 on site parking spaces and 1 prefabricated single-story concession building. A concrete cap is located on the northern end of the site which was installed as part of a remedial action plan approved by the California Department of Toxic Substances Control. Due to the past hazardous materials issues on the site and the presence of the concrete cap, uses on the site are limited in nature and ground disturbance must be minimal and approved by the California Department of Toxic Substance Control.

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Your comments and concerns are important to us and we look forward to hearing from you. If you have any questions or comments regarding the project, I can be contacted via email (bsampson@cityofranhocordova.org) or by phone (916-851-8758).

Sincerely,



Bret E. Sampson  
Environmental Coordinator  
City of Rancho Cordova  
Planning Department  
2729 Prospect Park Drive  
Rancho Cordova, CA 95670  
916-851-8758

Enclosures:

Figure 1: Project Location and Vicinity

Figure 2: Project Area

Figure 3: Aerial



MIWOK United Auburn Indian Community  
MAIDU of the Auburn Rancheria

Gene Whitehouse  
Chairman

John L. Williams  
Vice Chairman

Danny Rey  
Secretary

Jason Camp  
Treasurer

Calvin Moman  
Council Member

July 14, 2016

Bret E. Sampson  
Environmental Coordinator  
City of Rancho Cordova  
2729 Prospect Park Dr  
Rancho Cordova, CA 95670

RE: AB 52 Consultation Request for Proposed Kilgore Soccer Field Complex Project, City of Rancho Cordova, CA

Dear Environmental Coordinator Bret E. Sampson,

The United Auburn Indian Community (UAIC) received a letter from City of Rancho Cordova dated 5/9/2016, formally notifying us of a proposed project, the Kilgore Soccer Field Complex Project in City of Rancho Cordova, and an opportunity to consult under AB 52. UAIC does not wish to initiate consultation under AB 52 at this time, but should the project change in material ways, we request that the Tribe be informed of those changes so that we may reassess the need to initiate consultation. We do ask, however, that this letter be made part of the project record.

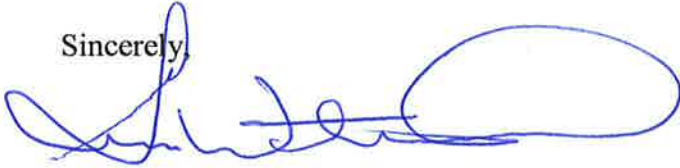
While we do not wish to initiate AB 52 consultation at this time, we would like to receive copies of any archaeological reports or cultural resource assessments (including requests for, and the results of, records searches) that are completed for the proposed project so we can determine whether tribal cultural resources that are important to UAIC could be impacted. We also request copies of future environmental documents for the proposed project so that we have the opportunity to comment on potential impacts and proposed mitigation measures related to cultural resources. Finally, please contact us if you discover any tribal cultural resources within the project area.

If tribal cultural resources are identified, it is UAIC's policy to have a tribal monitor present during any ground disturbing activities. It is also our policy to have tribal representatives present during any surveys, including initial pedestrian surveys, to identify tribal cultural resources. UAIC's policy is to preserve tribal cultural resources in place and avoid them whenever possible. And, subsurface testing and data recovery must not occur without first consulting with UAIC and receiving UAIC's written consent.

If you have any questions or additional information to provide, please contact Marcos Guerrero, our Cultural Resources Manager, at (530) 883-2364 or by email at [mguerrero@auburnrancheria.com](mailto:mguerrero@auburnrancheria.com).

Thank you for notifying UAIC of the proposed project. We look forward to working with you on other projects in the future.

Sincerely,



Gene Whitehouse  
Chairman

CC: Mathew Moore, UAIC Tribal Historic Preservation Officer  
Marcos Guerrero, UAIC Cultural Resources Manager

**APPENDIX F – SOIL MANAGEMENT PLAN AND  
DTSC APPROVAL LETTER**





Matthew Rodriguez  
Secretary for  
Environmental Protection



## Department of Toxic Substances Control

Barbara A. Lee, Director  
8800 Cal Center Drive  
Sacramento, California 95826-3200



Edmund G. Brown Jr.  
Governor

November 24, 2015

Ms. Meredith Bransten  
Foothill associates  
590 Menlo Drive, Suite 5  
Rocklin, California 95765

RECEIVED

NOV 30 2015

FOOTHILL ASSOC.

SOIL MANAGEMENT AND DISPOSAL PLAN FOR KILGORE SOCCER FIELDS,  
PURITY OIL SALES – DELTA GUNITE, RANCHO CORDOVA, CALIFORNIA

Dear Ms. Bransten:

The Department of Toxic Substances Control (DTSC) has reviewed the Soil Management and Disposal Plan (SMDP) for Kilgore Soccer Fields prepared by Wallace-Kuhl & Associates. The proposed construction of a Soccer Complex is identified by the Sacramento County Assessor number (APNs) 072-0260-031 (Parcel B) and 072-0260-032 (Parcel C) on the Purity Oil Sales – Delta Gunite Site (the Site) located at the corner of White Rock Road and Kilgore Road, Rancho Cordova, California. Removal Actions completed at the site included recording a Land Use Covenant (LUC) on the Site because hazardous substances above levels that would permit unrestricted land use remain at the Site. The SMDP has been prepared to meet the soil management requirement of the LUCs which were recorded on the Parcel B and C in May 2014 and June 2010, respectively. The proposed construction on the Site will consist of excavation of trenches and pits for construction of buried utilities, grading, installation of field lighting, construction of three soccer fields, bleachers, small concessions buildings, and parking and landscaped areas.

The purpose of the SMDP is to ensure that impacted soils are managed appropriately for reuse at the Site, for offsite disposal, and to minimize exposures to onsite workers and nearby community. DTSC accepts the submitted document.

If you have any questions, please contact me at (916) 255-3851  
or [cindy.chain-britton@dtsc.ca.gov](mailto:cindy.chain-britton@dtsc.ca.gov)

Sincerely,

Cindy Chain-Britton  
Project Manager  
Brownfields and Environmental Restoration Program

Ms. Meredith Bransten  
November 24, 2015  
Page 2

cc: Mr. Fernando A. Amador, P.E., Chief  
Sacramento Responsible Party Unit  
Brownfields and Environmental Restoration Program  
Department of Toxic Substances Control  
8800 Cal Center Drive  
Sacramento, California 95826



*Soil Management and Disposal Plan*

**KILGORE SOCCER FIELDS**

Rancho Cordova, California

WKA No. 10712.01

October 8, 2015

*Prepared for:*

Ms. Meredith Bransten  
Foothill Associates  
590 Menlo Drive, Suite 5  
Rocklin, CA 95765

*Prepared By:*

Wallace-Kuhl & Associates  
3050 Industrial Boulevard  
West Sacramento, California 95691

*Soil Management and Disposal Plan*

**KILGORE SOCCER FIELDS**

WKA No. 10712.01

**TABLE OF CONTENTS**

INTRODUCTION .....	1
General Information.....	2
Site Description .....	3
Project Background .....	3
Key Personnel and Responsibilities.....	5
Recognition of COCs in Environmental Media.....	7
General Safe Work Practices .....	7
Chemical Hazard Information .....	9
Inhalation Exposure.....	9
Dermal Exposure.....	10
Ingestion Exposure.....	10
Safe Work Practices for Working with Contaminated Soil .....	12
Access Controls during Site Operations .....	14
Emergency Planning .....	14
Chain of Custody, Packing and Transportation .....	14
Soil Staging and Storage Operations .....	14
Waste Segregation Operations .....	15
Sampling and Analysis Plan .....	15
Sampling Frequency .....	16
Transportation and Disposal/Recycling .....	17
Transportation and Disposal Plan.....	17
Backfilling and Restoration .....	18
Contaminated Soil Management and Disposal Plan Review.....	18
Contaminated Soil Management and Disposal Plan Prepared by: .....	18
FIGURES	
Vicinity Map .....	Figure 1
Aerial Site Map .....	Figure 2
APPENDIX A – Chemical Hazard Information	
APPENDIX B – Acknowledgement of Understanding	



*Soil Management and Disposal Plan*

**KILGORE SOCCER FIELDS**

Rancho Cordova, Sacramento County, California

WKA No. 10712.01

October 8, 2015

**INTRODUCTION**

Wallace-Kuhl & Associates (WKA) prepared this *Soil Management and Disposal Plan* (SMDP) for Foothills Associates to submit to California Department of Toxic Substances Control (DTSC) and the City of Rancho Cordova. This SMDP is intended to serve as a guidance document for managing disturbed soil whenever constituents of concern are discovered by future construction activities. This SMDP address the proposed construction of a Soccer Complex on property identified by the Sacramento County Assessor numbers (APNs) 072-0260-031 (Parcel B) and 072-0260-032 (Parcel C) in Rancho Cordova, Sacramento County, California (Site). Figure 1 illustrates the parcels comprising the Site. This SMDP was prepared because the Site was formerly occupied by the Brighton Oil Company Site, located in Rancho Cordova, Sacramento County, California. This *Soil Management and Disposal Plan* describes information that will be used by on-site personnel to recognize visual evidence or chemical odors that may indicate the presence identified Constituents of Concern (COCs) in soil disturbed by future construction activities at the Site. The COCs for this project include: volatile organic carbons (VOCs), total petroleum hydrocarbons as motor oil (TPHmo), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), perchlorate, and total lead. This plan describes procedures that will be followed during the stockpiling, storage, sampling, laboratory testing, and subsequent handling of soil disturbed by construction activities. Key activities discussed in this plan are listed below.

- Procedures for field monitoring disturbed soil.
- Procedures for collecting samples of disturbed soil for laboratory analyses to detect the presence of COCs.
- Procedures for monitoring excavation and grading operations in the vicinity of the capped area using visual delineators to demark the cap boundaries and visual observations of disturbed soil.
- Health and safety guidance intended to protect on-site construction workers from risks arising from exposure to soil containing concentrations of the COCs including; volatile organic carbons (VOCs), total petroleum hydrocarbons as motor oil (TPHmo), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), perchlorate, and the metal lead.



- Procedures for monitoring Contractor's activities in areas known to contain COCs.
- Procedures for handling, temporary stockpiling, transporting within the Site or to off-site locations disturbed soil for the purpose of recycling or disposing soil determined to contain concentrations of COCs.

The *Soil Management and Disposal Plan* should be kept onsite and periodically reviewed by persons responsible for construction activities. It should be noted that field conditions might change and that Site changes may require modification of this plan. Subcontractors may similarly elect to modify this SMDP, but only to upgrade or increase safety levels for each activity in response to new information.

This plan was prepared prior to identifying the scope of construction activities and the selecting of a general contractor. This plan assumes that WKA will be retained to provide periodic monitoring of Site conditions and will communicate with DTSC whenever Site conditions are demonstrated to have changed. This plan assumes that soil will be disturbed during Site grading to establish final topography, including placing fill on top of the existing asphalt cap to provide for a future automobile parking location. Trenching is expected to be limited to construction of underground utilities and infrastructure. Soil disturbing activities are not expected to penetrate shallow groundwater. However, whenever groundwater is encountered during construction, the contractor shall contact DTSC and WKA so that appropriate guidance can be provided at that time. Enforcement of the policies and practices of the SMDP will be the responsibility of the selected general contractor's superintendent. This SMDP is intended to be a companion document to the selected contractor's site-specific Health and Safety Plan.

### General Information

Project Name:	Kilgore Soccer Fields
Site Location:	The Site is located in Rancho Cordova, California and was formerly occupied by the Brighton Oil Company. The Site is accessed from Kilgore Road south of White Rock Road. The latitude and longitude of the Site access point is 38.5877 degrees N & 121.2704 degrees W.
Work Description:	Excavation of trenches and pits for construction of buried utilities, grading, installation of field lighting, and construction off bleachers and small concessions buildings.



Site Owner: Parcel B – Kilgore and White Rock, LLC  
Parcel C - Mid Valley Development Inc.

Environmental Consultant: Wallace-Kuhl & Associates  
Contact: Dennis B. Nakamoto  
Phone Number: 916-372-1434  
Cell Phone Number 916-997-0770

General Contractor: TBD  
Contact: TBD  
Phone Number: TBD  
Cell Phone Number: TBD

Document prepared by: Wallace-Kuhl & Associates  
Contact Dennis B. Nakamoto, PG, CEG, CHG  
Phone Number 916-372-1434  
Date: October 7, 2015

### Site Description

The Site is bounded to the east by undeveloped land and the Folsom South Canal, to the west by Kilgore Road, and to the south and north by undeveloped vacant land (Figure 1 and 2). The Site covers approximately 10 acres of vacant undeveloped land located in an area of mixed commercial, light industrial and residential developments. The Site was part of a larger property operated by the Brighton Oil Company used to process and recycle waste motor oils.

Topography across the Site and surrounding area is generally flat with a ground surface elevation of approximately 115 feet above mean sea level (msl). The Site appears on the 7.5 Minute Series topographic map of the Carmichael Quadrangle prepared by the United States Geological Survey (USGS). The Site is 600 feet west of the Folsom South Canal.

### Project Background

The Brighton Oil Company operated a waste oil processing and recycling facility on the Site. The California Department of Toxic Substances Control (DTSC) filed suit under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) alleging that The Brighton Oil Company had illegally discharged contaminants to soil and shallow groundwater. As a result of the Lawsuit, a Remedial Action Plan (RAP) was drafted for Parcel B in 2011 and for Parcel C in 2009.



The executed RAP for Parcel B called for excavation of soils impacted by waste oil recycling activities at the Site. Activities included excavation of areas of impacted soil, installation of a cap over former disposal pits and installation of groundwater monitoring wells to monitor the attenuation of impacted groundwater beneath the Site.

Soil investigations found that soil at Parcel B was impacted with concentrations of VOCs, TPHmo, PAHs, PCBs, perchlorate, and total lead. Soil samples contained naphthalene at concentrations up to 600 milligrams per kilogram (mg/kg) and lead up to 3,890 mg/kg.

A soil vapor study conducted on Parcel B showed concentrations of benzene, tetrachloroethene, and vinyl chloride at concentrations exceeding acceptable risk targets identified in the Health Risk Assessment for the Site. Target concentrations for the soil vapor analysis were established at 248 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) for benzene, 1580  $\mu\text{g}/\text{m}^3$  for tetrachloroethene, and 94.8  $\mu\text{g}/\text{m}^3$  for vinyl chloride. Health risks identified by the investigation are related to exposure to COCs in soil that are now covered by the capped area and the area surrounding the capped area.

Soil investigations conducted on Parcel C showed that soil at the Site contained TPHs, PCBs, perchlorate, and lead. Lead concentrations up to 950 mg/kg and TPH-as-motor oil up to 29,000 mg/kg were found at the Site. Cleanup actions removed impacted soil to four feet below grade. Laboratory analyses on soil samples collected from the excavation floor revealed TPH-as-motor oil at a concentration of 3,000 mg/kg. No further excavation was completed, which means the 2,500 mg/kg TPH-as-motor oil clean up goal stated in the RAP for the Site was not achieved.

After the conclusion of the RAP activities, the DTSC determined that unacceptable risk arising from chemicals remaining in Site soil existed for human exposures under residential, industrial, and commercial land use scenarios. DTSC determined that a land use covenant should be enforced for Parcel B and Parcel C. Conditions of the land use covenant recorded on the Site Deed are as follows:

- Prohibited uses
  - A residence, including a mobile home or factory built housing, constructed or installed for use as a residential human habitation.
  - A hospital for humans.
  - A public or private school for persons under 21 years of age.
  - A day care for children.



- Soil Management
  - No activities that will disturb soil (e.g., excavation, grading, removal, trenching, filling, earth movement, or mining) or construction of structures shall be allowed on the Site without a Soil Management Plan (SMP) approved in writing by the DTSC in advance.
  - Any contaminated soil brought to the surface by grading, excavation, trenching, or backfilling shall be managed in accordance with all applicable provisions of state and federal law.
- Prohibited activities
  - Drilling for water, oil, or natural gas without prior written approval by the DTSC.
  - Extraction of groundwater for purposes other than Site remediation or construction dewatering that has not received prior approval from the DTSC.
  - Damaging or destroying, or preventing access to, any of the groundwater monitoring wells on the Site, until notified by the DTSC in writing that such well has been properly abandoned and destroyed.

The Land Use Covenant for the capped area at the Site (Parcel B) identifies the following restrictions.

- No buildings may be placed over the capped area, unless authorized by DTSC prior to construction.
- The owner shall maintain the cap in good condition and repair the cap as necessary
- The capped area may be used as a parking lot and/or driveway, as long as the integrity of the cap is maintained and infiltration of liquids is prevented.
- Utilities that do not carry liquids may be installed in the capped area, but any excavation must be approved by the DTSC prior to installation, and will be subject to the requirements to manage soil appropriately, and repair the cap.

WKA understands that DTSC has approved the plan to construct a soccer field complex at the Site, including plans to place fill over the capped area and construct an automobile parking area on top of the fill.

#### Key Personnel and Responsibilities

The following personnel are responsible for the activities at the Site and the health and safety (H&S) of field personnel. The general contractor's supervisory personnel (Project Manager and Superintendent) are responsible for ensuring that the provisions of this *Soil Management and*



*Disposal Plan* are implemented in the field. The names of supervisory and field superintendents responsible for implementing and oversight activities assigned to the Site are identified below.

General Contractor

<b>Site Project Manager:</b>	TBD
Cell Phone Number:	TBD
Responsibilities:	Responsible reporting to DTSC and WKA field observations indicating the potential presence of one or more COC in soil disturbed by construction activities.
<b>Site Superintendent:</b>	TBD
Cell Phone Number:	TBD
Responsibilities:	Directs, schedules and coordinates field operations
Reporting Relationship:	Reports directly to general contractor's management
Regulators onsite:	Unspecified, non-essential
Special Site entry procedures:	A locked gate that limits access to essential personnel currently controls Site access
Warning method for Site evacuation:	Verbal, truck horn
Chemicals of potential concern:	Volatile organic carbons (VOCs), total petroleum hydrocarbons as motor oil (TPHmo), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), perchlorate, and total lead
Affected environmental media:	Soil
Distance to nearest right-of-way:	Less than 25 feet
Fire extinguisher & first aid kit:	Located in Construction Trailer, on equipment and in company vehicles





The general contractor will notify DTSC and WKA of the identity of its appointed Superintendent responsible for implementing and overseeing the *Soil Management and Disposal Plan*. The Superintendent shall have the authority to suspend work in the area of the Site where field observations indicate the provisions of the *Soil Management and Disposal Plan* should be applied. The Superintendent will evaluate the effectiveness of the general contractor's field efforts to applying procedures of the *Soil Management and Disposal Plan* on an ongoing basis.

#### Recognition of COCs in Environmental Media

- The presence of or VOCs, TPHs, PAHs, PCBs, perchlorates, and metals in soil at the Site has been evidenced by indicators including, but not limited to:
  - gray to gray-green soil coloration to soil that is normally observed have a brown to tan color;
  - Multi-colored chemical sheens observed on wet soil surfaces;
  - Multi-colored chemical sheens observed on water surfaces; and,
  - Petroleum hydrocarbon odor or mothball odor.
- The presence of hazardous levels of lead in soil typically has no visual indicators, except for the potential relationship between non-soil debris found in disturbed soil.

The Contractor's Superintendent shall designate lead personnel responsible for collecting worker's observations of indicators that COCs may be present in Site soil. Whenever soil is suspected of containing COCs, the Superintendent shall take all actions necessary to cause suspected soil to be isolated from ongoing soil disturbing activities and to notify WKA of the discovery.

#### General Safe Work Practices

All field personnel must assume responsibility for preventing exposure to hazards by performing their tasks in an appropriate manner and following good personal hygiene habits. Personal protection begins with an awareness of chemical indicators, knowledge of routes of exposure, and a good workmanship approach to performing tasks.

The Superintendent has full responsibility for all on-site construction activities and assumes control of these operations. The Superintendent is also responsible for ensuring that all procedures and guidelines specified in this *Soil Management and Disposal Plan* are effectively implemented and executed at the Site. The Superintendent will implement the *Soil Management and Disposal Plan* and notify WKA of any observations related to suspected



contamination at the Site. WKA will notify DTSC of information indicating that contamination has been discovered at the Site. The Superintendent will perform the following functions:

- Conduct the initial Site safety meeting for all Site personnel. Ensure that all field personnel fully understand the *Soil Management and Disposal Plan* and sign the *Acknowledgement of Understanding* form included in Appendix B;
- Conduct tailgate safety briefings. The briefings are to include discussions of the day's proposed tasks, hazards, work zone designations, weather conditions, decontamination procedures, safety procedures, emergency procedures, and any changes to the *Soil Management and Disposal Plan*;
- Develop and establish the Site emergency procedures and implement decontamination protocols in accordance with the guidelines identified in this *Soil Management and Disposal Plan*;
- Confirm that all assigned field personnel satisfy training requirements specified in this *Soil Management and Disposal Plan*. Copies of training records for the general contractor's personnel should be kept on-site;
- Ensure maintenance and proper use of personal protective equipment (PPE);
- Ensure personal hygiene and proper decontamination procedures are implemented and followed;
- Maintain a daily field record documenting known or suspected soil contamination and procedures used to manage the identified materials; and,
- Halt or redirect Site activities and, if necessary, evacuate the Site at any time unsafe and uncontrollable work conditions are present.

Field personnel assigned to the Site are responsible for taking all reasonable precautions to prevent injury to themselves, their fellow employees, or other Site personnel. Personnel are required to review and fully understand the *Soil Management and Disposal* before beginning Site activities, and implement the procedures and protocols specified therein. All accidents and any unsafe conditions or deviations from the procedures defined in the *Soil Management and Disposal Plan* must be reported to the Superintendent. The general contractor shall cease work in cases of imminent hazard and immediately notify the DTSC and appropriate first responders of the hazard. The general contractor's Superintendent and Project Manager shall be responsible for insuring that DTSC and WKA are immediately notified in such cases.



### Chemical Hazard Information

The chemicals of concern (COC) at the Site are volatile organic carbons (VOCs), total petroleum hydrocarbons (TPHs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), perchlorate, and metals. These COCs were previously identified in the soil. Concentrations of total lead were reported in soil up to 3,890 mg/kg. Total petroleum hydrocarbons as motor oil remain in soil at concentrations up to 3,000 mg/kg as does naphthalene at concentrations up to 600 mg/kg. The *Soil Management and Disposal Plan* presents standard operating procedures to protect the health and safety of construction personnel as well as the public from chemical exposure during construction activities.

Chemical hazard information for known and potential COCs is excerpted from the Agency for Toxic Substances and Disease Registry (ATSDR) Toxicological Profile Information Sheets, (ATSDR, 2003) and is summarized in Appendix A. For more information, call the ATSDR Information Center at 1-888-422-8737, or check the ATSDR website at <http://www.atsdr.cdc.gov/toxpro2.html>.

Hazard type:	solid/dust; vapor/mist in air
Hazard level:	low
Characteristics:	free product know in soil
Suspend operations:	if suspected petroleum hydrocarbons are encountered in soil or in the ambient air

The exposure pathways of potential concern for soil exposures are:

- Inhalation of contaminated airborne dust or mist
- Incidental ingestion of contaminated soil
- Dermal contact with contaminated soil

### Inhalation Exposure

The resuspension of dust by soil disturbing activities shall be minimized according to the project Fugitive Dust Emissions Plan that the General Contractor shall have prepared for this project. The Fugitive Dust Emissions Plan will describe the use of water spray to prevent the resuspension of dust by moistening soil and causing a crust to form over the soil surface. The Fugitive Dust Emissions Plan will also discuss project limits arising from conditions such as wind.



### Dermal Exposure

Incidental dermal exposure to soil containing chemicals of concern is a secondary exposure route of concern. This exposure pathway should be controlled with the institution of proper hygienic practices and use of appropriate personal protective equipment.

### Ingestion Exposure

Incidental ingestion of soil containing chemicals of concern is a secondary exposure route of concern. This exposure pathway should be controlled with the institution of proper hygienic practices.

Personal Protective Equipment (PPE) should be selected by the general contractor, which will protect workers from the hazards and potential hazards they are likely to encounter as identified during the Site characterization and analysis. The level of protection provided by PPE selection may be increased if additional information on-site conditions shows that increased protection is necessary to reduce workers exposures below established Permissible Exposure Limits and published exposures levels for hazardous substances and health hazards. Safety vests, safety glasses, earplugs, and steel-toed boots are required at the Site at all times. Hardhats are required of all those working on the ground within reach of excavation equipment, grading equipment, or other overhead hazards. Should any additional suspected or known material contamination be found during the course of work, a secure perimeter would be established around the impacted area until modifications can be made to the Health and Safety Plan.

The following minimum personal protection equipment should be used if suspected or known contaminated soil is encountered:

Level of protection planned:	Level D personal protection equipment (PPE) Includes: hard hat, high visibility outer wear (i.e. reflective safety vest), coverall, boots, safety glasses, as necessary, hard hat, and leather and nitrile gloves; sun screen, lip balm, sun glasses, hearing protection (ear plugs), as necessary.
------------------------------	--

The personal protection equipment listed above is intended to provide protection for the skin and eyes. Respirators and protective suits (Tyveks) will not be required unless the superintendent indicates possible over-exposure.



PPE Disposal: Dispose of PPE items in approved containers

Level D is a work uniform that provides only minimal protection against chemical hazards. Level D protection would include skin and eye protection but would not necessarily require respiratory protection.

All Site personnel must inspect their PPE a minimum of once each work shift. PPE equipment shall be replaced if any of the following conditions are noted:

- Unusual odors;
- Softening, staining, swelling, or sloughing of material;
- Deformation, abrasions, cuts, or tears;
- Skin or eye irritation while wearing PPE;

PPE effectiveness will be discussed during daily tailgate meetings with the superintendent. The Superintendent and Project Manager will document problems encountered with PPE. DTSC and WKA shall be notified in a timely manner of problems encountered with PPE.

The PPE selected for use at the project provides limited protection against chemical contaminants. Tyvek protective clothing must not be worn in areas where splashing of hazardous liquids on the skin is possible. In addition, persons performing hot work such as welding, brazing, and metal cutting must not wear Tyvek clothing.

In the event workers encounter suspected contaminated soil, the Superintendent should be immediately notified. The workers should temporarily cease operations and move away to a safe distance. The area will be immediately isolated through the placement of caution tape, traffic cones or other appropriate means. If the situation becomes an obvious emergency, such as acute chemical release or workers experiencing physical distress, emergency responders should be contacted immediately (call 911).

The Superintendent will immediately contact WKA for assistance. WKA in coordination with DTSC will assist the general contractor with identifying proper procedures for managing the suspected soil. The Site shall be secured by fencing to control unauthorized access.

For personnel conducting activities within work zones containing identified hazardous materials, hand and eyewash facilities will be provided. Prior to eating, drinking, or smoking, on-site workers are required to wash their hands thoroughly. In addition, food and beverage should be



kept out of the work zone. All personnel will be required to wash their hand and faces prior to leaving the Site at the end of the workday or prior to taking breaks, such as lunch. All disposable protective equipment shall be left on the Site and bagged for appropriate disposal. Boots will be brushed to remove material from the Site within the designated decontamination zone. The following minimum equipment will be present in the work zones:

- Brushes with handles for boot cleaning
- Water with hand/face wash/rinse basins
- Hand soap and paper towels, and
- Plastic garbage bags for used protective clothing.

The project Storm Water Pollution Prevention Plan will require the spread of materials outside of the project boundaries be minimized using Best Management Practices. Equipment will be cleaned prior to movement out of active work zones. Trucks will be dry brushed for removal of material from the truck body and tires prior to exiting work zones. Prior to exiting the work zone, e.g., crossing public thoroughfares or completion of contaminated material excavation, equipment such as excavators and loaders will be cleaned. Cleaning of the excavator will include extending the bucket over a dump truck and brushing or water washing. Material on the excavator or loader tracks and/or tires will be removed by dry brushing. During dry conditions, material residues will be removed from equipment by dry brushing.

The Superintendent may direct the construction activities to de-mobilize from the construction area where suspected contamination is encountered until appropriate samples have been obtained. Materials excavated during construction activities that are suspected of containing contamination may be placed into temporary stockpiles, provided that each stockpile is placed on and covered by a layer of Visqueen that is sufficiently thick as to prohibit tearing by contractor's activities. Upon receipt of the testing results, WKA will distribute the results and address any conditions that may need modification to the *Soil Management and Disposal Plan* for future encounters of the material. The general contractor shall obtain approval from its selected off-site disposal facility to deliver contaminated soil for disposal.

#### Safe Work Practices for Working with Contaminated Soil

The following work practices will be adopted for work at this Site that involves handling, moving, transporting, testing, or coming into contact with soil containing elevated levels of chemicals of concern:



- Keep airborne dust to an absolute minimum using water
- Prevent soil ingestion by not eating, smoking, drinking and chewing tobacco or gum near work operations
- Avoid runoff of dust suppression water
- Wash hands and face before eating, drinking, smoking, or using bathroom. This requires an adequate supply of wash water, soap, and towels on-site. Store food and water so it will not be contaminated, and
- Read, review, and sign the Health and Safety Work Plan.

All material handling, transportation, and placement operations will be conducted to minimize visible dust. The material will be placed directly into a truck for off-site disposal or in a stockpile on plastic and covered with plastic either until it can be reused on-site or disposed at an off-site facility.

A health and safety training program should be provided for the following groups of workers at the construction-site: laborers working on the ground in the Site when known or suspected contamination is encountered: heavy equipment operators and truckers who will leave their cabs within the Site when working in area of known or suspected contamination, personnel involved in sampling and construction observation within the Site, and supervisory personnel for workers on the Site.

Each worker involved with the handling of contaminated materials should obtain the following training, as required for their work assignment:

- OSHA 40-hour Hazwoper Occasional Site Worker training as outlined in 29 CFR 1910.120(e), and the 8-hour Annual Refresher Training

The general contractor employees on this project shall be 40-hour Hazwoper trained and should be called upon to provide field support in areas where known or suspected contamination is encountered has identified the following workers:

- To Be Named at a Later Date



### Access Controls during Site Operations

Physical boundaries will be established around the Site. Supervisors will instruct all workers and visitors on the limits of the restricted areas. No one will be allowed to enter a restricted area without the required protective equipment for that area. The general contractor's Site Health and Safety Officer will ensure compliance with all restricted entry and exit procedures. A decontamination point will be designated for personnel to exit from the contaminated area and enter into the clean area where they may rest and drink fluids. Visitors should check in immediately upon arrival. Only authorized visitors will be allowed access to the contaminated areas. Each visitor will be required to provide and wear the necessary protective equipment during visits and will be escorted by supervisory personnel while on-site.

### Emergency Planning

Key on-site personnel will have radios and/or cell phones for communication purposes. Furthermore, due to potential excessive noise generated by the heavy equipment, verbal commands, hand signaling, and eye contact between personnel on the ground and in heavy equipment will also be utilized as a viable means of communication. In the event of an emergency evacuation, personnel will be notified by a radio, horn, or verbal communication to vacate the Site immediately and meet at adjacent streets.

Any material excavated during construction will be stockpiled onsite; composite samples will be collected from the stockpiled soil. These samples will be analyzed in accordance with landfill criteria to evaluate the soil for disposal.

### Chain of Custody, Packing and Transportation

Samples shall be collected, transported, and received under chain-of-custody protocols consistent with procedures established by the USEPA. Copies of chain of custody forms shall be completed whenever samples are sent to the laboratory. Upon receipt at the laboratory, the laboratory will implement their internal chain of custody program during each phase of the analytical process. The chain of custody forms shall be used to document the condition of the samples on arrival at the lab.

### Soil Staging and Storage Operations

During construction activities, suspected or known contaminated soil, which has been excavated, will be temporarily stockpiled on-site. These stockpiles will require proper





maintenance to reduce the lateral spread of airborne contaminants. As the suspected/known contaminated soil is excavated, it should be stockpiled on plastic and periodically wetted and/or covered with plastic to prevent wind erosion or contact with precipitation. Stockpiles will not be placed in drainage areas.

Maximum storage time will not exceed 90 days after waste generation in compliance with hazardous waste storage regulations. Storage of any hazardous waste longer than 90 days after its generation may require a permit or approval from the Department of Toxic Substances Control (DTSC).

### Waste Segregation Operations

Prior to stockpiling/staging, the excavated soil should be segregated to the extent possible to avoid any mixture of soils of different waste classifications with respect to hazardous/non-hazardous waste characteristics. This segregation will minimize the amount of hazardous soils generated, and associated disposal cost. The soil segregation will be based upon point of origin and criteria for hazardous and non-hazardous soils and the available sampling data.

This plan assumes that soil containing volatile organic carbons (VOCs), total petroleum hydrocarbons (TPHs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), perchlorate, or metals oil will be classified as non-hazardous materials suitable for placement in a Class III landfill. All soil excavated during proposed construction activities will be assumed contaminated and stockpiled until proper characterization.

### Sampling and Analysis Plan

Soil sampling and other fieldwork will be performed by WKA. California Laboratory Services located in Rancho Cordova, California will perform the soil sample analyses. A chain-of-custody record will accompany all sample shipments for analyses. Forms(s) will be completed and sent with the samples for each laboratory and each shipment. If multiple coolers are sent to a single laboratory on a single day, chain-of-custody forms will be completed and sent with the samples for each cooler. The chain-of-custody record will identify the contents of each shipment and maintain the custodial integrity of the samples. Generally, a sample is considered to be in someone's custody if: it is in someone's physical possession, in someone's view, locked up, or kept in a secured area that is restricted to authorize personnel. Until receipt by the laboratory, the custody of the samples will be the responsibility of the sample collector.



Soil samples will be obtained by driving clean stainless-steel tubes into the stockpiled soil. The ends of the sample tube will be covered with Teflon tape and sealed with plastic end caps.

The samples will be submitted under chain-of-custody documentation to a California Department of Health Services certified laboratory for at least the following chemical analysis:

EPA Method 8015M

- Extractable Petroleum Hydrocarbons

EPA Method 8310

- polycyclic aromatic hydrocarbons

EPA Method 8260B

- VOCs

EPA Method 6010B

- Total Lead

EPA Method 8081A

- polychlorinated biphenyl

EPA Method 314

- Perchlorate

These samples will be analyzed in accordance with landfill or disposal/recycling facility acceptance criteria to characterize the soil for disposal and/or recycling.

### Sampling Frequency

Soil samples will be obtained from soil stockpiles generated during construction activities at varying frequencies. The following describes the sampling frequency for obtaining soil samples from stockpile material derived from locations verified by laboratory analyses to contain lead or motor oil.

Four discrete soil samples will be obtained from approximately every 250 cubic yards (cy) of stockpiled soil generated during drilling or excavation and analyzed for disposal. The samples will be obtained by using a hand sample methodologies to collect the samples at approximate depths of two feet into the pile. The set of four samples will later be composited into one



sample by laboratory personnel and analyzed for the COCs listed above, unless additional analyses are requested by DTSC or WKA.

#### Transportation and Disposal/Recycling

The waste material will be profiled and accepted for disposal before being moved to an offsite disposal/recycling facility. Copies of waste profile reports used to secure disposal permission from the landfill will be provided to the DTSC. In addition, compliance with the land disposal restrictions and land ban requirements for hazardous wastes will be documented and provided to the DTSC.

#### Transportation and Disposal Plan

An approved, properly licensed, waste hauling contractor will transport soil removed from the Site. Once filled, trucks will be covered to prevent fugitive dust or soil from falling off the trucks. Trucks will be cleaned of debris prior to leaving the Site. The General Contractor shall comply at all times with provisions of its Stormwater Pollution Prevention Plan. All material will be shipped under a bill of lading unless characterization sampling reveals that the material qualifies as hazardous waste. In the event the material is hazardous, it will be transported under hazardous waste manifest.

The owner/operator shall ensure that no trucks are allowed to transport excavated material off-site unless:

- Trucks are maintained such that no spillage can occur from holes or other openings in cargo compartments
- Trucks are equipped with a freeboard six inches or greater and
- Loads are adequately wetted and either:
  1. Covered with tarps; or
  2. Loaded such that the material does not touch the front, back, or sides of the cargo compartment at any point less than six inches from the top and that no point of the load extends above the top of the cargo compartment

All contractors will be responsible for operating in accordance with the most current Occupational Safety and Health Administration (OSHA) regulations including 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response, and 29 CFR 1926, Construction Industry Standards, as well as other applicable federal, state and local laws and regulations.



In the event of an off-site release or accident involving the transported material, notification will immediately be given to the CHP and other appropriate agencies. A list of emergency contacts is included as an attachment to this document.

#### Backfilling and Restoration

All excavations advanced in support of installation of utilities or on-site improvements should be backfilled with clean imported fill. Import soil that may be required to complete the grading or backfill excavations shall be tested according to the Department of Toxic Substances Control, *Informational Advisory for Clean Imported Fill Material*, dated October 2001.

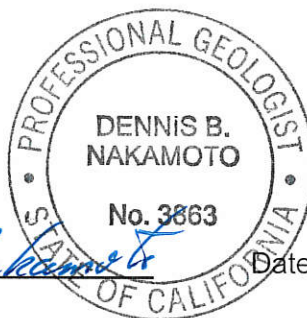
#### Contaminated Soil Management and Disposal Plan Review

All key field personnel assigned to the Project must review the *Soil Management and Disposal Plan* dated October 8, 2015 during the site-specific training and briefing ("tailgate meeting"). Each key field team member must sign the Acknowledgment of Understanding form included in Appendix B. The form will be maintained by the superintendent at the Site throughout the course of Site activities.

The Superintendent shall be responsible for informing all Site personnel of any changes to the *Soil Management and Disposal Plan* and describing the specific details of the changes during tailgate safety meetings.

#### Contaminated Soil Management and Disposal Plan Prepared by:

Dennis B. Nakamoto, PG, CEG, CHG  
Senior Hydrogeologist  
Wallace-Kuhl & Associates



Signature:

*Dennis Nakamoto*

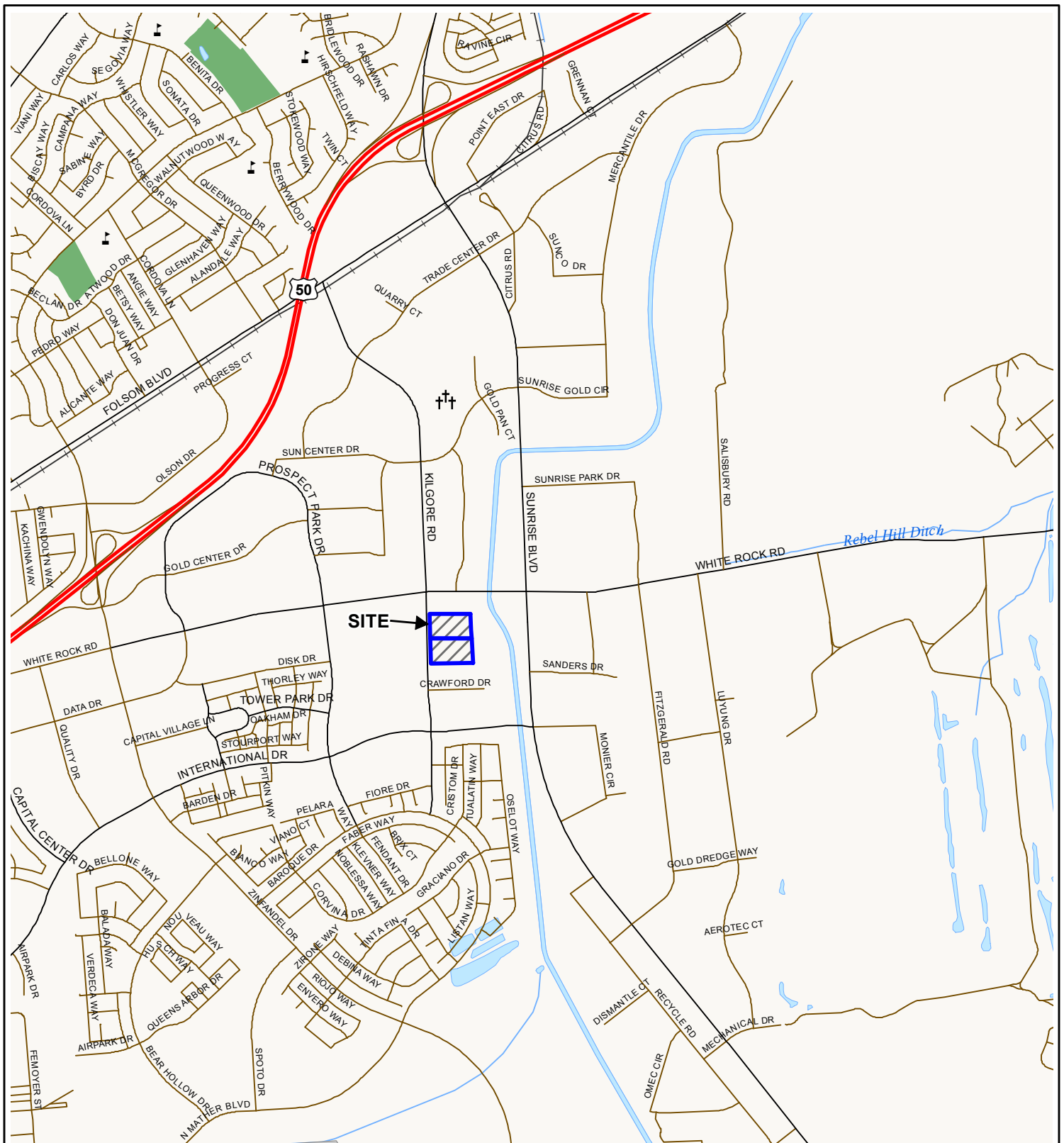
Date:

*10/8/2015*

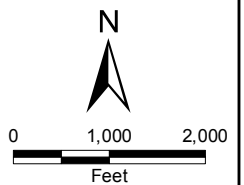


## FIGURES



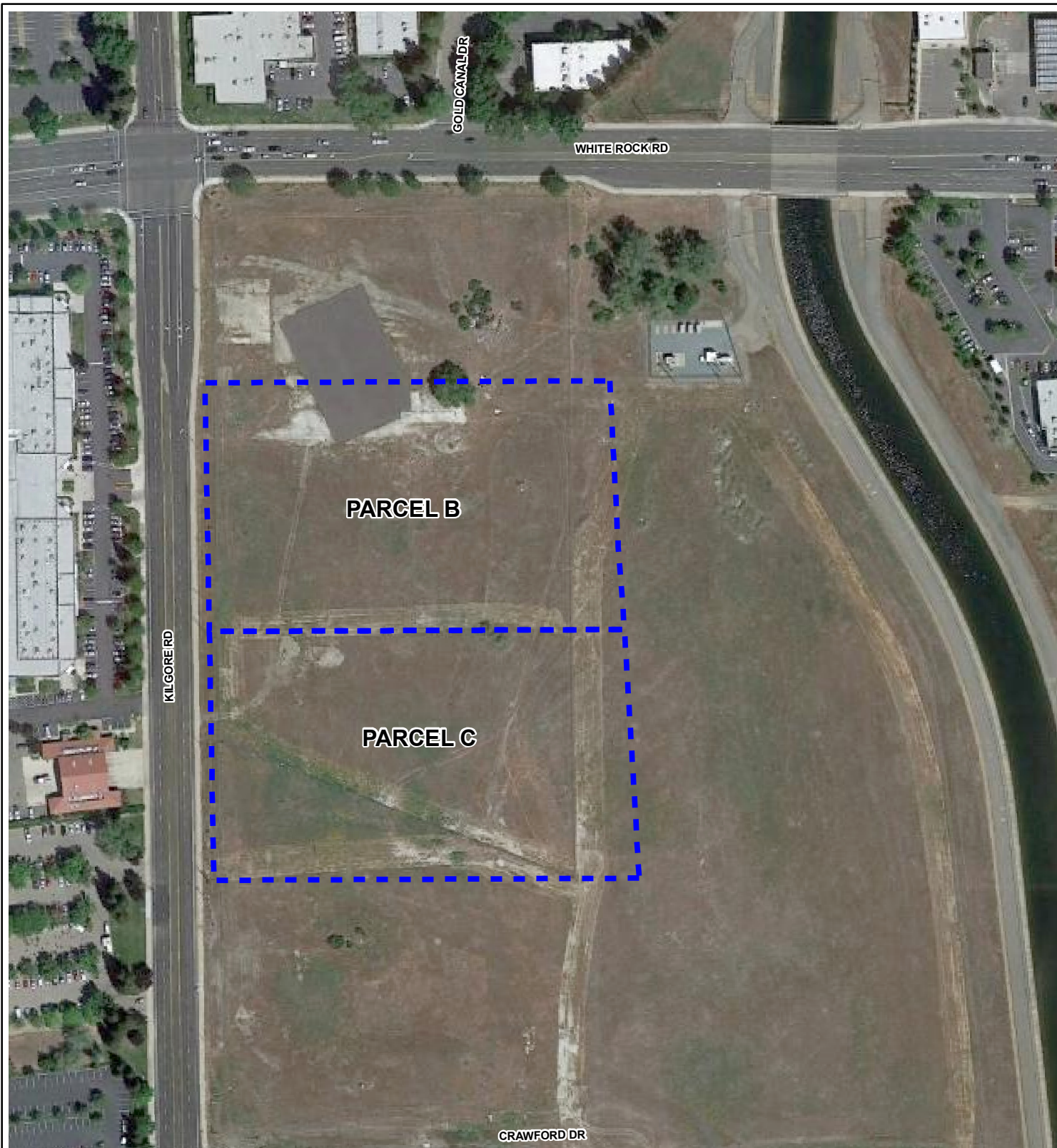


Street data courtesy of Sacramento County.  
 Hydrography courtesy of the U.S. Geological Survey  
 acquired from the GIS Data Depot, December, 2007.  
 Projection: NAD 83, California State Plane, Zone II



**VICINITY MAP**  
**KILGORE SOCCER FIELDS**  
 Rancho Cordova, California

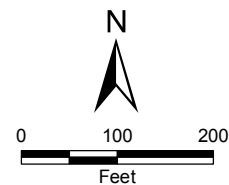
<b>FIGURE 1</b>	
DRAWN BY	RWO
CHECKED BY	JWR
PROJECT MGR	DBN
DATE	10/15
<b>WKA NO. 10712.01</b>	



Aerial provided by ESRI.  
 Projection: NAD 83, California State Plane, Zone II

**Legend**

 Site Boundary



**AERIAL SITE MAP**  
**KILGORE SOCCER FIELDS**  
 Rancho Cordova, California

<b>FIGURE 2</b>	
DRAWN BY	RWO
CHECKED BY	JWR
PROJECT MGR	DBN
DATE	10/15
<b>WKA NO. 10712.01</b>	

## APPENDIX A

### CHEMICAL HAZARD INFORMATION





## CHEMICAL HAZARD INFORMATION

### Petroleum Hydrocarbons

Petroleum hydrocarbons such as diesel fuel and motor oil may include a wide range of substances, some of which may pose substantive human health hazards. The aromatic volatile petroleum hydrocarbons including benzene, toluene, ethylbenzene and total xylenes (BTEX) compounds are generally of greater concern, in part because these compounds are more likely to exist in the worker's breathing zone. Petroleum hydrocarbons are distinguished from each other primarily by their boiling point ranges, chemical additives, and uses. Petroleum hydrocarbons such as diesel and motor oil can affect the nervous system when inhaled in large quantities. Petroleum hydrocarbons may contain volatile organic compounds and can have moderate to high fire and explosion hazards. Routes of entry are inhalation, adsorption and ingestion. Minor irritation is possible if eyes are exposed to fumes or dust. The target organs are eyes, skin, respiratory system and central nervous system.

Petroleum distillates (naphtha) are mildly toxic by inhalation. They can cause unconsciousness, dyspnea, and a bluish tint to the skin. Recovery follows after removal from exposure. In mild form, intoxication resembles drunkenness. On a chronic basis, no true poisoning occurs; however, effects may include headache, lack of appetite, dizziness, sleeplessness, indigestion, and nausea. It is combustible when exposed to heat or flame and can react with oxidizing materials.

- The OSHA PEL is listed as 500 parts per million (ppm) (as petroleum distillates)
- The Cal/OSHA PEL is listed as 300 ppm (as VM&P naphtha), 100 ppm (as Stoddard solvent), and 300 ppm (as gasoline)

The TLV is listed as 300 ppm (as VM&P naphtha), 100 ppm (as Stoddard solvent), and 300 ppm (as gasoline)

### Motor Oil

Automotive lubricant oils are typically 75 to 85 percent base stock (i.e., crude oil-derived product) combined with performance enhancing additives. The base stock may consist of a mineral oil, synthetic oil, or a blend of both. The additives may contain zinc, magnesium, molybdenum, phosphorus, and sulfur and bromine compounds. Motor oil has a burning lubricating oil odor.



## CHEMICAL HAZARD INFORMATION

Lubricant oils are viscous liquids with low vapor pressures and low volatile organic compound (VOC) content. Thus, exposure to hazardous VOCs via inhalation is expected to be minimal. Both mineral-based and synthetic oils have low acute oral and dermal toxicity. The main effects in humans following accidental ingestion of even large quantities of these oils are limited to irritation of the digestive tract, with symptoms of nausea, vomiting and diarrhea. Skin may be mildly or moderately irritated following repeated or prolonged exposure to mineral and synthetic base oils (accidental spills rarely cause problems). Unused mineral-based lubricant oil contains very small amounts of polycyclic aromatic hydrocarbons (PAHs). A number of PAHs are classified as “probably carcinogenic to humans” based on animal evidence.

No OSHA PEL, Cal/OSHA PEL, or ACGIH TLV is listed for motor oil.

### Gasoline

Gasoline is produced from the light distillates during petroleum fractionation. Its major components include paraffins, olefins, naphthenes, aromatics, and recently ethanol. Gasoline also contains various functional additives as required for different uses, such as antiknock fluids, antioxidants, metal deactivators, corrosion inhibitors, anti-icing agents, preignition preventers, upper-cylinder lubricants, dyes, and decolorizers. Lead additives in particular were widely used in gasoline until the introduction of vehicle catalytic converters.

Mild cases of gasoline ingestion can cause inebriation, vomiting, vertigo, drowsiness, confusion, and fever. Aspiration into the lungs and secondary pneumonia may occur unless prevented.

Gasoline can cause hyperemia of the conjunctiva and other eye disturbances. Gasoline is a skin irritant and a possible allergen. Repeated or chronic dermal contact can result in drying of the skin, lesions, and other dermatologic conditions.

- No OSHA PEL is listed for gasoline
- The Cal/OSHA PEL is listed as 300 ppm
- The TLV is listed as 300 ppm

**WARNING: The exhaust from this chemical is known to the State of California to cause cancer.**

### Benzene

Benzene is a clear, volatile liquid. It is colorless, highly flammable, and toxic, with a characteristic odor. It is a severe eye and moderate skin irritant. Human effects by inhalation and ingestion include euphoria, changes in sleep and motor activity, nausea and vomiting, other blood effects, dermatitis, and fever. In industry, inhalation is the primary route of chronic



## CHEMICAL HAZARD INFORMATION

benzene poisoning. If the liquid is aspirated into the lung it may cause pulmonary edema. Poisoning by skin contact has also been reported. Exposure to high concentrations (3,000 ppm) may result in acute poisoning, which is characterized by the narcotic action of benzene on the central nervous system. Chronic poisoning occurs most commonly through inhalation and dermal absorption. Benzene is a known human carcinogen that can cause leukemia.

- The OSHA PEL is listed as 1 ppm
- The Cal/OSHA PEL is listed as 1 ppm
- The TLV is listed as 0.5 ppm

Note: Published exposure limits designate a skin notation indicating that dermal contact can contribute to the overall exposure.

**WARNING: This chemical is known to the State of California to cause cancer.**

**WARNING: This chemical is known to the State of California to cause birth defects or other reproductive harm.**

### Naphthalene

Naphthalene is a colorless to brown solid with an odor of mothballs. Poisoning may occur by inhalation, ingestion, or skin absorption. Naphthalene can cause nausea, headache, fever, anemia, liver damage, vomiting, convulsions, and coma. It is an experimental teratogen and a questionable carcinogen.

Naphthalene is flammable when exposed to heat or flame and reacts with oxidizing materials. It is explosive in the form of vapor or dust when exposed to heat or flame. When heated to decomposition, it emits acrid smoke and irritating fumes.

- The OSHA PEL is listed as 10 ppm
- The Cal/OSHA PEL is listed as 10 ppm
- The TLV is listed as 10 ppm

Note: Published exposure limits designate a skin notation indicating that dermal contact can contribute to the overall exposure.

### Lead

Lead is a naturally occurring bluish-gray metal found in small amounts in the earth's crust. Lead can be found in all parts of our environment. Much of it comes from human activities including burning fossil fuels, mining, and manufacturing.



## CHEMICAL HAZARD INFORMATION

Lead has many different uses. It is used in the production of batteries, ammunition, metal products (solder and pipes), and devices to shield X-rays. Because of health concerns, lead from paints and ceramic products, caulking, and pipe solder has been dramatically reduced in recent years. The use of lead as an additive to gasoline was banned in 1996 in the United States.

The effects of lead are the same whether it enters the body through breathing or swallowing. Lead can affect almost every organ and system in your body. The main target for lead toxicity is the nervous system, both in adults and children. Long-term exposure of adults can result in decreased performance in some tests that measure functions of the nervous system. It may also cause weakness in fingers, wrists, or ankles. Lead exposure also causes small increases in blood pressure, particularly in middle-aged and older people and can cause anemia. Exposure to high lead levels can severely damage the brain and kidneys in adults or children and ultimately cause death. In pregnant women, high levels of exposure to lead may cause miscarriage. High-level exposure in men can damage the organs responsible for sperm production

- The OSHA PEL is listed for as 0.05
- The Cal/OSHA PEL is listed as 0.05 ppm
- The TLV is listed as 5 ppm

### **Polycyclic Aromatic Hydrocarbons**

Polycyclic aromatic hydrocarbons (PAHs) are a group of over 100 different chemicals that are formed during the incomplete burning of coal, oil and gas, garbage, or other organic substances like tobacco or charbroiled meat. PAHs are usually found as a mixture containing two or more of these compounds, such as soot.

Some PAHs are manufactured. These pure PAHs usually exist as colorless, white, or pale yellow-green solids. PAHs are found in coal tar, crude oil, creosote, and roofing tar, but a few are used in medicines or to make dyes, plastics, and pesticides.

Mice that were fed high levels of one PAH during pregnancy had difficulty reproducing and so did their offspring. These offspring also had higher rates of birth defects and lower body weights. It is not known whether these effects occur in people.



## CHEMICAL HAZARD INFORMATION

Animal studies have also shown that PAHs can cause harmful effects on the skin, body fluids, and ability to fight disease after both short- and long-term exposure, but these effects have not been seen in people.

- The OSHA PEL is listed for as 0.2 mg/m<sup>3</sup>
- The Cal/OSHA PEL is listed as 0.2 mg/m<sup>3</sup>
- ACGIH TLV is not listed for PAH

### Polychlorinated Biphenyl

Polychlorinated biphenyls are mixtures of up to 209 individual chlorinated compounds (known as congeners). There are no known natural sources of PCBs. PCBs are either oily liquids or solids that are colorless to light yellow. Some PCBs can exist as a vapor in air. PCBs have no known smell or taste. Many commercial PCB mixtures are known in the U.S. by the trade name Aroclor.

PCBs have been used as coolants and lubricants in transformers, capacitors, and other electrical equipment because they don't burn easily and are good insulators. The manufacture of PCBs was stopped in the U.S. in 1977 because of evidence they build up in the environment and can cause harmful health effects. Products made before 1977 that may contain PCBs include old fluorescent lighting fixtures and electrical devices containing PCB capacitors, and old microscope and hydraulic oils

- The OSHA PEL is not listed for PCBs
- The Cal/OSHA PEL is listed as 1 ppm
- ACGIH TLV is not listed for PCBs

### Perchlorate

Perchlorates are colorless salts that have no odor. There are five perchlorate salts that are manufactured in large amounts: magnesium perchlorate, potassium perchlorate, ammonium perchlorate, sodium perchlorate, and lithium perchlorate. Perchlorate salts are solids that dissolve easily in water.

One place where perchlorates occur naturally is in western Texas and in saltpeter deposits in Chile, where the saltpeter is used to make fertilizer. Perchlorates can also form naturally in the atmosphere, leading to trace levels of perchlorate in precipitation. Perchlorates can be very reactive chemicals that are used mainly in explosives, fireworks, road flares, and rocket motors. The solid booster rocket of the space shuttle is almost 70% ammonium perchlorate.



## CHEMICAL HAZARD INFORMATION

Perchlorates are also used for making other chemicals. Many years ago, perchlorates were used as a medication to treat an overactive thyroid gland.

The health effects of perchlorate salts are due to the perchlorate itself and not to the other component (i.e., magnesium, ammonium, potassium, etc.). Perchlorate affects the ability of the thyroid gland to take up iodine. Iodine is needed to make hormones that regulate many body functions after they are released into the blood. Perchlorate's inhibition of iodine uptake must be great enough to affect the thyroid before it is considered harmful. Healthy volunteers who took about 35 milligrams (35 mg) of perchlorate every day for 14 days or 3 mg for 6 months showed no signs of abnormal functioning of their thyroid gland or any other health problem. Studies of workers exposed for years to approximately the same amount of perchlorates found no evidence of alterations in the worker's thyroids, livers, kidneys, or blood. However, there is concern that people exposed to higher amounts of perchlorate for a long time may develop a low level of thyroid activity; the name of this medical condition is hypothyroidism. Low levels of thyroid hormones in the blood may lead to adverse effects on the skin, cardiovascular system, pulmonary system, kidneys, gastrointestinal tract, liver, blood, neuromuscular system, nervous system, skeleton, male and female reproductive system, and numerous endocrine organs.

Studies in animals also have shown that the thyroid gland is the main target of toxicity for perchlorate. Perchlorate did not affect reproduction in a study in rats.

Other chemicals such as thiocyanate (in food and cigarette smoke) and nitrate (in some food), are known to inhibit iodide uptake.



## **APPENDIX B**

### **ACKNOWLEDGEMENT OF UNDERSTANDING**







## **APPENDIX G – GREENHOUSE GAS EMISSIONS**



Kilgore Soccer Fields - Sacramento County, Annual

**Kilgore Soccer Fields**  
**Sacramento County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	313.00	Space	2.82	125,200.00	0
City Park	7.36	Acre	7.36	320,601.60	0
Other Non-Asphalt Surfaces	0.58	Acre	0.58	25,264.80	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	3.5	<b>Precipitation Freq (Days)</b>	58
<b>Climate Zone</b>	6			<b>Operational Year</b>	2018
<b>Utility Company</b>	Sacramento Municipal Utility District				
<b>CO2 Intensity (lb/MWhr)</b>	590.31	<b>CH4 Intensity (lb/MWhr)</b>	0.029	<b>N2O Intensity (lb/MWhr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

Kilgore Soccer Fields - Sacramento County, Annual

Project Characteristics - Kilgore

Land Use - 3.4 acres of pavement

Construction Phase - Construction anticipated to last 3 months

Off-road Equipment - Construction equipment derived from Project Description

Off-road Equipment - Construction equipment derived from Project Description

Off-road Equipment - Construction equipment derived from Project Description

Off-road Equipment - Construction equipment derived from Project Description

Grading -

Vehicle Trips - Trip generation based .

Energy Use - Energy use accounts for proposed parking lot and field lights. Kilowatt data derived from Lighting and Photometrics sheet

Water And Wastewater - Water use derived from Project Description

Operational Off-Road Equipment - glitch

Fleet Mix - No Heavy-Heavy Duty Trucks anticipated

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	150
tblAreaCoating	Area_EF_Nonresidential_Interior	100	150
tblAreaCoating	Area_EF_Parking	100	0
tblConstructionPhase	NumDays	300.00	40.00
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	PhaseEndDate	1/19/2018	11/24/2017
tblConstructionPhase	PhaseStartDate	11/25/2017	9/30/2017
tblEnergyUse	LightingElect	0.00	0.29
tblEnergyUse	LightingElect	0.88	1.00
tblFleetMix	HHD	0.02	0.00
tblFleetMix	LDA	0.54	0.56
tblOffRoadEquipment	OffRoadEquipmentType		Rollers

Kilgore Soccer Fields - Sacramento County, Annual

tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Surfacing Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblVehicleTrips	ST_TR	22.75	313.04
tblVehicleTrips	WD_TR	1.89	173.64
tblWater	OutdoorWaterUseRate	8,769,302.73	651,703.00

**2.0 Emissions Summary**



Kilgore Soccer Fields - Sacramento County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	8-7-2017	9-30-2017	1.1919	1.1919
		Highest	1.1919	1.1919

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0131	4.0000e-005	4.1500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.9600e-003	7.9600e-003	2.0000e-005	0.0000	8.5100e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	58.4184	58.4184	2.8700e-003	5.9000e-004	58.6671
Mobile	0.4577	1.0155	4.8560	0.0103	0.8651	0.0133	0.8784	0.2320	0.0125	0.2445	0.0000	939.3275	939.3275	0.0527	0.0000	940.6456
Waste						0.0000	0.0000		0.0000	0.0000	0.1279	0.0000	0.1279	7.5600e-003	0.0000	0.3168
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.6108	0.6108	3.0000e-005	1.0000e-005	0.6134
<b>Total</b>	<b>0.4709</b>	<b>1.0156</b>	<b>4.8602</b>	<b>0.0103</b>	<b>0.8651</b>	<b>0.0133</b>	<b>0.8784</b>	<b>0.2320</b>	<b>0.0125</b>	<b>0.2445</b>	<b>0.1279</b>	<b>998.3646</b>	<b>998.4925</b>	<b>0.0632</b>	<b>6.0000e-004</b>	<b>1,000.2514</b>

Kilgore Soccer Fields - Sacramento County, Annual

**2.2 Overall Operational**

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0131	4.0000e-005	4.1500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.9600e-003	7.9600e-003	2.0000e-005	0.0000	8.5100e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	58.4184	58.4184	2.8700e-003	5.9000e-004	58.6671
Mobile	0.4577	1.0155	4.8560	0.0103	0.8651	0.0133	0.8784	0.2320	0.0125	0.2445	0.0000	939.3275	939.3275	0.0527	0.0000	940.6456
Waste						0.0000	0.0000		0.0000	0.0000	0.1279	0.0000	0.1279	7.5600e-003	0.0000	0.3168
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.6108	0.6108	3.0000e-005	1.0000e-005	0.6134
<b>Total</b>	<b>0.4709</b>	<b>1.0156</b>	<b>4.8602</b>	<b>0.0103</b>	<b>0.8651</b>	<b>0.0133</b>	<b>0.8784</b>	<b>0.2320</b>	<b>0.0125</b>	<b>0.2445</b>	<b>0.1279</b>	<b>998.3646</b>	<b>998.4925</b>	<b>0.0632</b>	<b>6.0000e-004</b>	<b>1,000.2514</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**3.0 Construction Detail**

**Construction Phase**



Kilgore Soccer Fields - Sacramento County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/7/2017	8/18/2017	5	10	
2	Grading	Grading	8/19/2017	9/29/2017	5	30	
3	Building Construction	Building Construction	9/30/2017	11/24/2017	5	40	
4	Paving	Paving	9/30/2017	11/24/2017	5	40	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 60**

**Acres of Paving: 3.4**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

Kilgore Soccer Fields - Sacramento County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	2	8.00	187	0.41
Grading	Rollers	1	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Scrapers	1	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Trenchers	1	8.00	78	0.50
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Rough Terrain Forklifts	1	8.00	100	0.40
Building Construction	Rubber Tired Dozers	2	8.00	247	0.40
Building Construction	Rubber Tired Loaders	1	8.00	203	0.36
Building Construction	Skid Steer Loaders	1	8.00	65	0.37
Building Construction	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Trenchers	1	8.00	78	0.50
Building Construction	Welders	0	8.00	46	0.45
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Surfacing Equipment	1	8.00	263	0.30
Paving	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Kilgore Soccer Fields - Sacramento County, Annual

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	4	10.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	198.00	77.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	4	10.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

**3.2 Site Preparation - 2017**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0602	0.0000	0.0602	0.0331	0.0000	0.0331	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0155	0.1641	0.0702	1.2000e-004		8.8300e-003	8.8300e-003		8.1300e-003	8.1300e-003	0.0000	10.8157	10.8157	3.3100e-003	0.0000	10.8986
<b>Total</b>	<b>0.0155</b>	<b>0.1641</b>	<b>0.0702</b>	<b>1.2000e-004</b>	<b>0.0602</b>	<b>8.8300e-003</b>	<b>0.0691</b>	<b>0.0331</b>	<b>8.1300e-003</b>	<b>0.0412</b>	<b>0.0000</b>	<b>10.8157</b>	<b>10.8157</b>	<b>3.3100e-003</b>	<b>0.0000</b>	<b>10.8986</b>

Kilgore Soccer Fields - Sacramento County, Annual

**3.2 Site Preparation - 2017**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.9000e-004	1.9600e-003	0.0000	3.7000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3571	0.3571	1.0000e-005	0.0000	0.3574
<b>Total</b>	<b>2.5000e-004</b>	<b>1.9000e-004</b>	<b>1.9600e-003</b>	<b>0.0000</b>	<b>3.7000e-004</b>	<b>0.0000</b>	<b>3.7000e-004</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.3571</b>	<b>0.3571</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.3574</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0602	0.0000	0.0602	0.0331	0.0000	0.0331	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0155	0.1641	0.0702	1.2000e-004		8.8300e-003	8.8300e-003		8.1300e-003	8.1300e-003	0.0000	10.8157	10.8157	3.3100e-003	0.0000	10.8986
<b>Total</b>	<b>0.0155</b>	<b>0.1641</b>	<b>0.0702</b>	<b>1.2000e-004</b>	<b>0.0602</b>	<b>8.8300e-003</b>	<b>0.0691</b>	<b>0.0331</b>	<b>8.1300e-003</b>	<b>0.0412</b>	<b>0.0000</b>	<b>10.8157</b>	<b>10.8157</b>	<b>3.3100e-003</b>	<b>0.0000</b>	<b>10.8986</b>

Kilgore Soccer Fields - Sacramento County, Annual

**3.2 Site Preparation - 2017**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.9000e-004	1.9600e-003	0.0000	3.7000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3571	0.3571	1.0000e-005	0.0000	0.3574
<b>Total</b>	<b>2.5000e-004</b>	<b>1.9000e-004</b>	<b>1.9600e-003</b>	<b>0.0000</b>	<b>3.7000e-004</b>	<b>0.0000</b>	<b>3.7000e-004</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.3571</b>	<b>0.3571</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.3574</b>

**3.3 Grading - 2017**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1222	0.0000	0.1222	0.0531	0.0000	0.0531	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0788	0.9235	0.4178	7.9000e-004		0.0422	0.0422		0.0389	0.0389	0.0000	72.8846	72.8846	0.0223	0.0000	73.4429
<b>Total</b>	<b>0.0788</b>	<b>0.9235</b>	<b>0.4178</b>	<b>7.9000e-004</b>	<b>0.1222</b>	<b>0.0422</b>	<b>0.1644</b>	<b>0.0531</b>	<b>0.0389</b>	<b>0.0919</b>	<b>0.0000</b>	<b>72.8846</b>	<b>72.8846</b>	<b>0.0223</b>	<b>0.0000</b>	<b>73.4429</b>

Kilgore Soccer Fields - Sacramento County, Annual

**3.3 Grading - 2017**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-003	1.1100e-003	0.0117	2.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.9000e-004	2.0000e-005	6.0000e-004	0.0000	2.1424	2.1424	8.0000e-005	0.0000	2.1444
<b>Total</b>	<b>1.5000e-003</b>	<b>1.1100e-003</b>	<b>0.0117</b>	<b>2.0000e-005</b>	<b>2.2000e-003</b>	<b>2.0000e-005</b>	<b>2.2200e-003</b>	<b>5.9000e-004</b>	<b>2.0000e-005</b>	<b>6.0000e-004</b>	<b>0.0000</b>	<b>2.1424</b>	<b>2.1424</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>2.1444</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1222	0.0000	0.1222	0.0531	0.0000	0.0531	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0788	0.9235	0.4178	7.9000e-004		0.0422	0.0422		0.0389	0.0389	0.0000	72.8845	72.8845	0.0223	0.0000	73.4428
<b>Total</b>	<b>0.0788</b>	<b>0.9235</b>	<b>0.4178</b>	<b>7.9000e-004</b>	<b>0.1222</b>	<b>0.0422</b>	<b>0.1644</b>	<b>0.0531</b>	<b>0.0389</b>	<b>0.0919</b>	<b>0.0000</b>	<b>72.8845</b>	<b>72.8845</b>	<b>0.0223</b>	<b>0.0000</b>	<b>73.4428</b>

Kilgore Soccer Fields - Sacramento County, Annual

**3.3 Grading - 2017**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-003	1.1100e-003	0.0117	2.0000e-005	2.2000e-003	2.0000e-005	2.2200e-003	5.9000e-004	2.0000e-005	6.0000e-004	0.0000	2.1424	2.1424	8.0000e-005	0.0000	2.1444
<b>Total</b>	<b>1.5000e-003</b>	<b>1.1100e-003</b>	<b>0.0117</b>	<b>2.0000e-005</b>	<b>2.2000e-003</b>	<b>2.0000e-005</b>	<b>2.2200e-003</b>	<b>5.9000e-004</b>	<b>2.0000e-005</b>	<b>6.0000e-004</b>	<b>0.0000</b>	<b>2.1424</b>	<b>2.1424</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>2.1444</b>

**3.4 Building Construction - 2017**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1051	1.1477	0.5510	9.6000e-004		0.0596	0.0596		0.0548	0.0548	0.0000	88.8515	88.8515	0.0272	0.0000	89.5321
<b>Total</b>	<b>0.1051</b>	<b>1.1477</b>	<b>0.5510</b>	<b>9.6000e-004</b>		<b>0.0596</b>	<b>0.0596</b>		<b>0.0548</b>	<b>0.0548</b>	<b>0.0000</b>	<b>88.8515</b>	<b>88.8515</b>	<b>0.0272</b>	<b>0.0000</b>	<b>89.5321</b>

Kilgore Soccer Fields - Sacramento County, Annual

**3.4 Building Construction - 2017**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.8500e-003	0.2121	0.0797	3.9000e-004	9.0100e-003	1.9200e-003	0.0109	2.6000e-003	1.8300e-003	4.4400e-003	0.0000	37.0551	37.0551	2.5100e-003	0.0000	37.1179
Worker	0.0198	0.0147	0.1550	3.1000e-004	0.0291	2.3000e-004	0.0293	7.7400e-003	2.1000e-004	7.9500e-003	0.0000	28.2797	28.2797	1.0700e-003	0.0000	28.3065
<b>Total</b>	<b>0.0297</b>	<b>0.2268</b>	<b>0.2348</b>	<b>7.0000e-004</b>	<b>0.0381</b>	<b>2.1500e-003</b>	<b>0.0402</b>	<b>0.0103</b>	<b>2.0400e-003</b>	<b>0.0124</b>	<b>0.0000</b>	<b>65.3348</b>	<b>65.3348</b>	<b>3.5800e-003</b>	<b>0.0000</b>	<b>65.4243</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1051	1.1477	0.5510	9.6000e-004		0.0596	0.0596		0.0548	0.0548	0.0000	88.8514	88.8514	0.0272	0.0000	89.5320
<b>Total</b>	<b>0.1051</b>	<b>1.1477</b>	<b>0.5510</b>	<b>9.6000e-004</b>		<b>0.0596</b>	<b>0.0596</b>		<b>0.0548</b>	<b>0.0548</b>	<b>0.0000</b>	<b>88.8514</b>	<b>88.8514</b>	<b>0.0272</b>	<b>0.0000</b>	<b>89.5320</b>



Kilgore Soccer Fields - Sacramento County, Annual

**3.4 Building Construction - 2017**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.8500e-003	0.2121	0.0797	3.9000e-004	9.0100e-003	1.9200e-003	0.0109	2.6000e-003	1.8300e-003	4.4400e-003	0.0000	37.0551	37.0551	2.5100e-003	0.0000	37.1179
Worker	0.0198	0.0147	0.1550	3.1000e-004	0.0291	2.3000e-004	0.0293	7.7400e-003	2.1000e-004	7.9500e-003	0.0000	28.2797	28.2797	1.0700e-003	0.0000	28.3065
<b>Total</b>	<b>0.0297</b>	<b>0.2268</b>	<b>0.2348</b>	<b>7.0000e-004</b>	<b>0.0381</b>	<b>2.1500e-003</b>	<b>0.0402</b>	<b>0.0103</b>	<b>2.0400e-003</b>	<b>0.0124</b>	<b>0.0000</b>	<b>65.3348</b>	<b>65.3348</b>	<b>3.5800e-003</b>	<b>0.0000</b>	<b>65.4243</b>

**3.5 Paving - 2017**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0256	0.2864	0.1775	3.3000e-004		0.0154	0.0154		0.0142	0.0142	0.0000	30.9943	30.9943	9.5000e-003	0.0000	31.2317
Paving	3.6900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0293</b>	<b>0.2864</b>	<b>0.1775</b>	<b>3.3000e-004</b>		<b>0.0154</b>	<b>0.0154</b>		<b>0.0142</b>	<b>0.0142</b>	<b>0.0000</b>	<b>30.9943</b>	<b>30.9943</b>	<b>9.5000e-003</b>	<b>0.0000</b>	<b>31.2317</b>

Kilgore Soccer Fields - Sacramento County, Annual

**3.5 Paving - 2017**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-003	7.4000e-004	7.8300e-003	2.0000e-005	1.4700e-003	1.0000e-005	1.4800e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.4283	1.4283	5.0000e-005	0.0000	1.4296
<b>Total</b>	<b>1.0000e-003</b>	<b>7.4000e-004</b>	<b>7.8300e-003</b>	<b>2.0000e-005</b>	<b>1.4700e-003</b>	<b>1.0000e-005</b>	<b>1.4800e-003</b>	<b>3.9000e-004</b>	<b>1.0000e-005</b>	<b>4.0000e-004</b>	<b>0.0000</b>	<b>1.4283</b>	<b>1.4283</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>1.4296</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0256	0.2864	0.1775	3.3000e-004		0.0154	0.0154		0.0142	0.0142	0.0000	30.9942	30.9942	9.5000e-003	0.0000	31.2317
Paving	3.6900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0293</b>	<b>0.2864</b>	<b>0.1775</b>	<b>3.3000e-004</b>		<b>0.0154</b>	<b>0.0154</b>		<b>0.0142</b>	<b>0.0142</b>	<b>0.0000</b>	<b>30.9942</b>	<b>30.9942</b>	<b>9.5000e-003</b>	<b>0.0000</b>	<b>31.2317</b>

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**3.5 Paving - 2017**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-003	7.4000e-004	7.8300e-003	2.0000e-005	1.4700e-003	1.0000e-005	1.4800e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.4283	1.4283	5.0000e-005	0.0000	1.4296
<b>Total</b>	<b>1.0000e-003</b>	<b>7.4000e-004</b>	<b>7.8300e-003</b>	<b>2.0000e-005</b>	<b>1.4700e-003</b>	<b>1.0000e-005</b>	<b>1.4800e-003</b>	<b>3.9000e-004</b>	<b>1.0000e-005</b>	<b>4.0000e-004</b>	<b>0.0000</b>	<b>1.4283</b>	<b>1.4283</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>1.4296</b>

**4.0 Operational Detail - Mobile**

---

**4.1 Mitigation Measures Mobile**

Kilgore Soccer Fields - Sacramento County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4577	1.0155	4.8560	0.0103	0.8651	0.0133	0.8784	0.2320	0.0125	0.2445	0.0000	939.3275	939.3275	0.0527	0.0000	940.6456
Unmitigated	0.4577	1.0155	4.8560	0.0103	0.8651	0.0133	0.8784	0.2320	0.0125	0.2445	0.0000	939.3275	939.3275	0.0527	0.0000	940.6456

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1,277.99	2,303.97	123.21	2,323,884	2,323,884
Parking Lot	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	1,277.99	2,303.97	123.21	2,323,884	2,323,884

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	10.00	5.00	6.50	33.00	48.00	19.00	66	28	6
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix





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**5.3 Energy by Land Use - Electricity**

**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	92974.5	24.8949	1.2200e-003	2.5000e-004	25.0008
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	125200	33.5236	1.6500e-003	3.4000e-004	33.6663
<b>Total</b>		<b>58.4184</b>	<b>2.8700e-003</b>	<b>5.9000e-004</b>	<b>58.6671</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	92974.5	24.8949	1.2200e-003	2.5000e-004	25.0008
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	125200	33.5236	1.6500e-003	3.4000e-004	33.6663
<b>Total</b>		<b>58.4184</b>	<b>2.8700e-003</b>	<b>5.9000e-004</b>	<b>58.6671</b>

**6.0 Area Detail**

Kilgore Soccer Fields - Sacramento County, Annual

**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0131	4.0000e-005	4.1500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.9600e-003	7.9600e-003	2.0000e-005	0.0000	8.5100e-003
Unmitigated	0.0131	4.0000e-005	4.1500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.9600e-003	7.9600e-003	2.0000e-005	0.0000	8.5100e-003

**6.2 Area by SubCategory**

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0127					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-004	4.0000e-005	4.1500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.9600e-003	7.9600e-003	2.0000e-005	0.0000	8.5100e-003
<b>Total</b>	<b>0.0131</b>	<b>4.0000e-005</b>	<b>4.1500e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>7.9600e-003</b>	<b>7.9600e-003</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>8.5100e-003</b>



Kilgore Soccer Fields - Sacramento County, Annual

**6.2 Area by SubCategory**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0127					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-004	4.0000e-005	4.1500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.9600e-003	7.9600e-003	2.0000e-005	0.0000	8.5100e-003
<b>Total</b>	<b>0.0131</b>	<b>4.0000e-005</b>	<b>4.1500e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>7.9600e-003</b>	<b>7.9600e-003</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>8.5100e-003</b>

**7.0 Water Detail**

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**7.1 Mitigation Measures Water**

Kilgore Soccer Fields - Sacramento County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.6108	3.0000e-005	1.0000e-005	0.6134
Unmitigated	0.6108	3.0000e-005	1.0000e-005	0.6134

**7.2 Water by Land Use**

**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.651703	0.6108	3.0000e-005	1.0000e-005	0.6134
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.6108</b>	<b>3.0000e-005</b>	<b>1.0000e-005</b>	<b>0.6134</b>

Kilgore Soccer Fields - Sacramento County, Annual

**7.2 Water by Land Use**

**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.651703	0.6108	3.0000e-005	1.0000e-005	0.6134
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.6108</b>	<b>3.0000e-005</b>	<b>1.0000e-005</b>	<b>0.6134</b>

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

Kilgore Soccer Fields - Sacramento County, Annual

**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1279	7.5600e-003	0.0000	0.3168
Unmitigated	0.1279	7.5600e-003	0.0000	0.3168

**8.2 Waste by Land Use**

**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.63	0.1279	7.5600e-003	0.0000	0.3168
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.1279</b>	<b>7.5600e-003</b>	<b>0.0000</b>	<b>0.3168</b>

Kilgore Soccer Fields - Sacramento County, Annual

**8.2 Waste by Land Use**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.63	0.1279	7.5600e-003	0.0000	0.3168
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.1279</b>	<b>7.5600e-003</b>	<b>0.0000</b>	<b>0.3168</b>

**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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**10.0 Stationary Equipment**

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
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Kilgore Soccer Fields - Sacramento County, Annual

**11.0 Vegetation**

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## **APPENDIX H – NOISE STUDY**





# Environmental Noise Assessment

## Kilgore Road Soccer Complex

Rancho Cordova, California

BAC Job # 2015-287

Prepared For:

Foothill Associates

Ms. Meredith Branstad  
590 Menlo Drive, Ste. 5  
Rocklin, CA 95765

Prepared By:

**Bollard Acoustical Consultants, Inc.**



Paul Bollard, President

December 10, 2015



# Table of Contents

Table of Contents.....	1
Introduction .....	2
Acoustical Fundamentals and Terminology .....	2
The Decibel .....	2
A-Weighting.....	5
Community Noise .....	5
Perception of Loudness.....	5
Sound Propagation.....	5
Perception of Changes in Noise Levels .....	7
Criteria for Acceptable Noise Levels .....	7
Rancho Cordova General Plan .....	7
Rancho Cordova Noise Ordinance.....	8
Noise Standards for Assessing Significance of Increases in Off-Site Traffic Noise .....	8
Existing (Baseline) Noise Environment.....	8
Standards of Significance Applied to this Project .....	9
Impacts and Mitigation Measures .....	10
Off-Site Noise Impacts due to the Kilgore Road Soccer Complex .....	11
Off-Site Traffic Noise Impact Evaluation.....	11
Playing Field Noise Impact Evaluation .....	11
On-Site Circulation and Parking Lot Noise Impacts on Existing Noise-Sensitive Land Uses .....	12
Traffic Noise Impacts upon the Playing Fields .....	13

## Introduction

The Kilgore Road Soccer Complex (Project) proposes construction of a facility with four (4) soccer fields and associated on-site parking on a currently vacant project site located immediately south of White Rock Road, east of Kilgore Road, within the city of Rancho Cordova, California. The project area is presented as Figure 1. Figure 2 shows the detailed project site plan.

The project site is surrounded by mostly commercial and professional land uses, with the nearest residential uses located south of International Drive approximately 1,200 feet from the center of the nearest proposed soccer field. While the exterior areas of the commercial/professional uses (parking lots) are considered insensitive to noise, the interior areas of those uses are considered sensitive, as are the exterior spaces of the nearest residences to the south.

Due to the potential noise generation of the project and the sensitivity of the surrounding uses, Foothill Associates has retained Bollard Acoustical Consultants, Inc. (BAC) to prepare this noise study report. The purposes of this report are to identify existing noise sources affecting the project area, to quantify baseline ambient noise conditions within the project area, and to identify potential noise impacts due to or upon the proposed project. It is intended that information contained in this report will be utilized in the development of the Noise Section of the project environmental document.

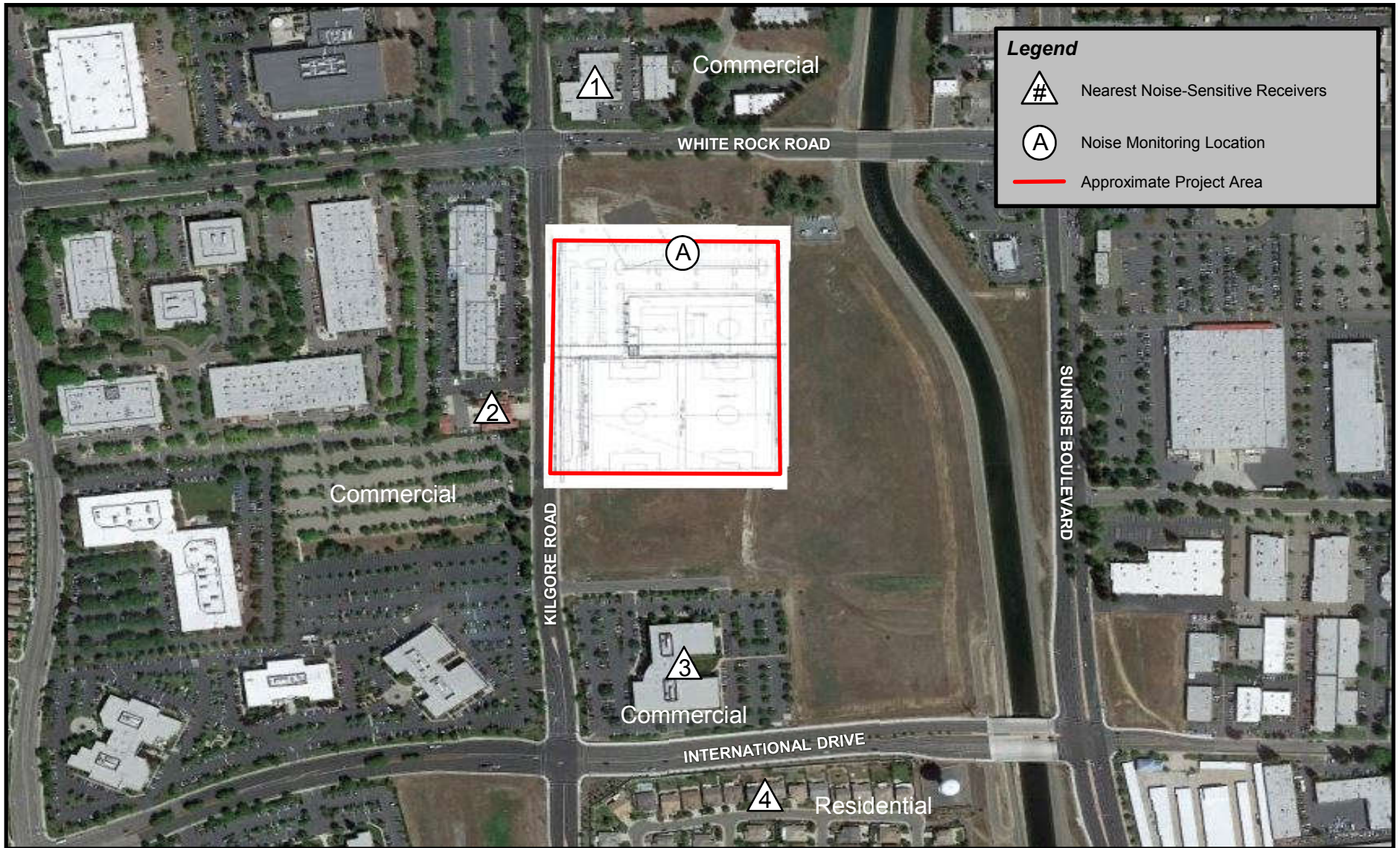
## Acoustical Fundamentals and Terminology

### The Decibel

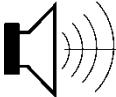
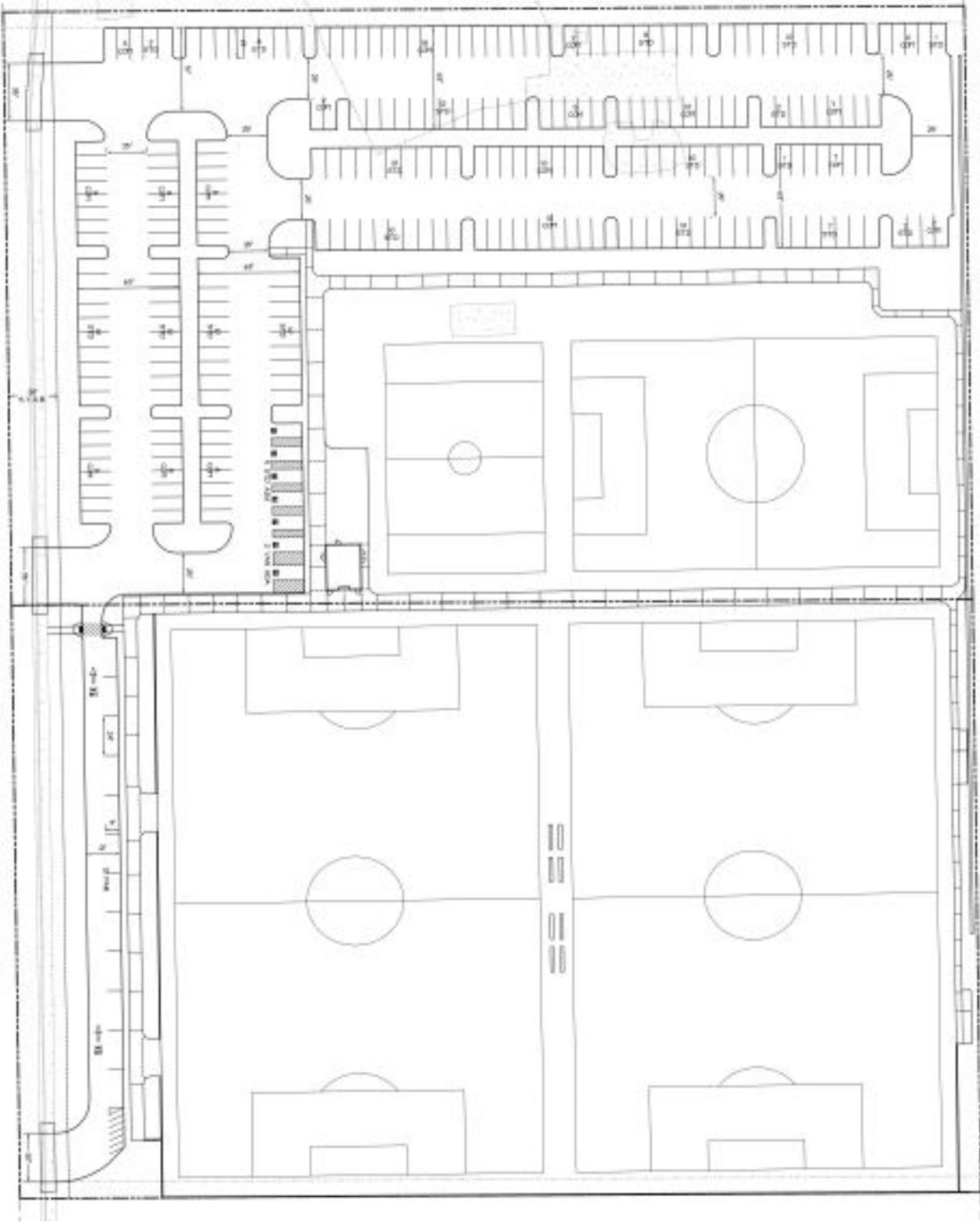
Noise is simply described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called Hertz (Hz).

Discussing sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel (dB) scale was devised. The decibel scale uses the hearing threshold (20 micropascals of pressure), as a point of reference, defined as 0 dB. Other sound pressures are compared to the reference pressure and the logarithm is taken to keep the numbers in a practical range. The dB scale allows a million-fold increase in pressure to be expressed as 120 dB.

**Figure 1**  
Project Area, Noise-Monitoring Locations and Nearest Receivers  
Kilgore Road Soccer Complex – Rancho Cordova, California



**Figure 2**  
Project Site Plan  
Kilgore Road Soccer Complex – Rancho Cordova, California



**BOLLARD**  
Acoustical Consultants

Scale (feet)  
0 120 240



## A-Weighting

To better relate overall sound levels and loudness to human perception, frequency-dependent weighting networks were developed. There is a strong correlation between the way humans perceive sound and A-weighted sound levels. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment for community exposures. All sound levels expressed in this section are A-weighted sound levels, unless noted otherwise. Definitions of acoustical terminology are provided in Appendix A.

## Community Noise

Community noise is commonly described in terms of the “ambient” noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level ( $L_{eq}$ ), over a given time period (usually one hour). The  $L_{eq}$  is the foundation of the day-night average noise descriptor, and shows very good correlation with community response to noise for the average person.

The  $L_{dn}$  is based upon the average noise level over a 24-hour day, with a +10 dB weighting applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because  $L_{dn}$  represents a 24-hour average, it tends to disguise short-term variations in the noise environment. Where short-term noise sources are an issue, noise impacts may be assessed in terms of maximum noise levels, hourly averages, or other statistical descriptors.

## Perception of Loudness

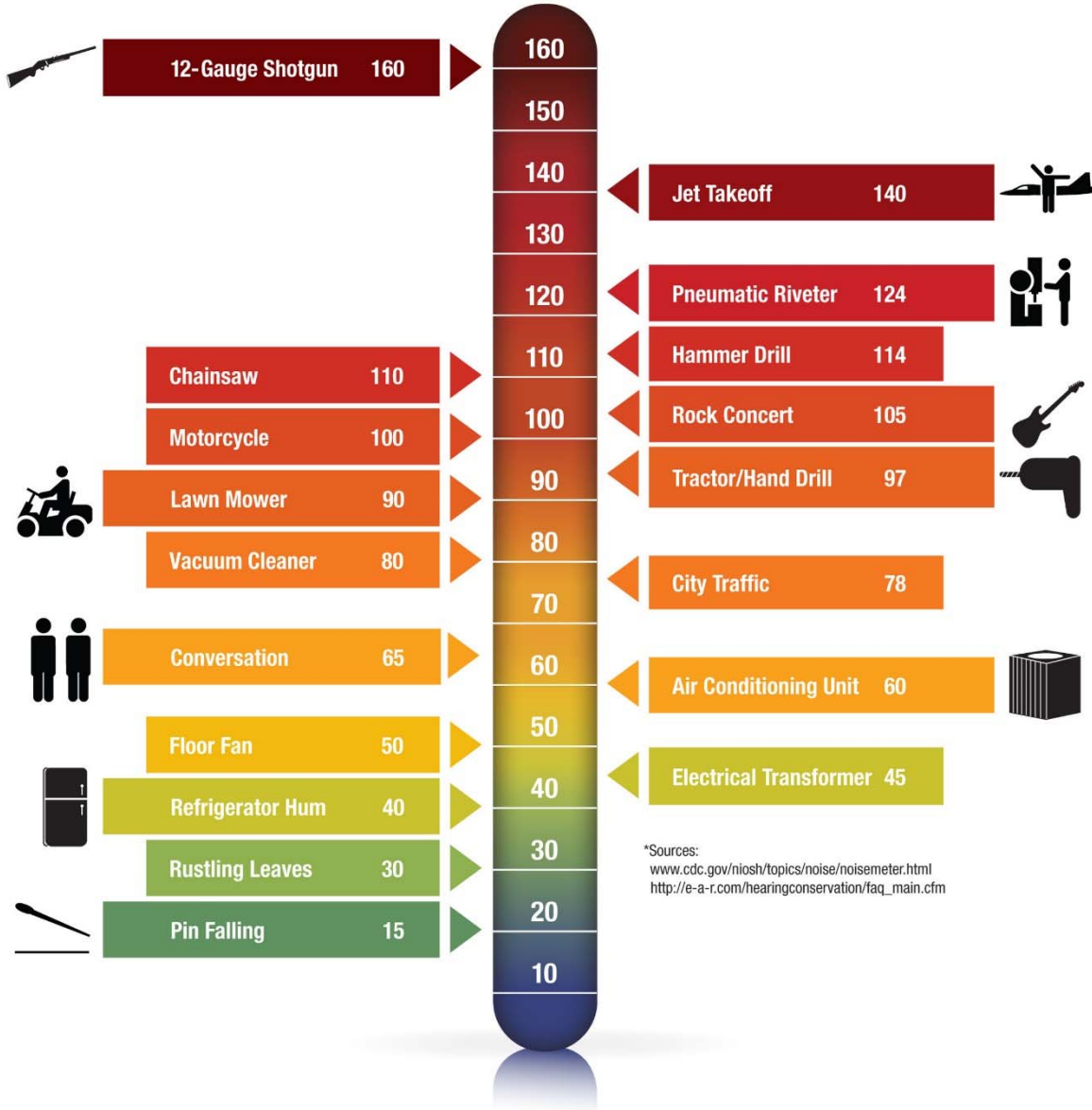
The perceived loudness of sounds and corresponding reactions to noise are dependent upon many factors, including sound pressure level, duration of intrusive sound, frequency of occurrence, time of occurrence, and frequency content. As mentioned above; however, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by weighing the frequency response of a sound level meter by means of the standardized A-weighting network. Table 1 shows examples of noise levels for several common noise sources and environments.

## Sound Propagation

It is commonly understood that sound decreases with distance. But the propagation of sound is dependent on considerably more variables than distance alone. Those variables include the type of noise source (point, moving point, or line sources), the directionality of the noise source, the frequency content of the source (low frequency sound is absorbed in the atmosphere at a slower rate than high-frequency sound and therefore “carries” farther), atmospheric conditions (wind, temperature, humidity, gradients), ground type (dirt, grass fields, concrete, etc.), shielding (structures, noise barriers, topography), and vegetation.

**Table 1**  
**Examples of Noise Sources**

**Decibel Scale (dBA)\***



\*Sources:  
[www.cdc.gov/niosh/topics/noise/noisemeter.html](http://www.cdc.gov/niosh/topics/noise/noisemeter.html)  
[http://e-a-r.com/hearingconservation/faq\\_main.cfm](http://e-a-r.com/hearingconservation/faq_main.cfm)

## Perception of Changes in Noise Levels

Table 2 is based upon recommendations made in August 1992 by Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these criteria have been applied to other sources of noise similarly described in terms of cumulative noise exposure metrics such as the  $L_{dn}$ .

<b>Table 2 Significance of Changes in Cumulative Noise Exposure</b>	
<b>Ambient Noise Level Without Project, <math>L_{dn}</math></b>	<b>Increase Required for Significant Impact</b>
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

Source: Federal Interagency Committee on Noise (FICON )

According to Table 2, an increase in noise from similar sources of 5 dB or more would be noticeable where the ambient level is less than 60 dB. Where the ambient level is between 60 and 65 dB, an increase in noise of 3 dB or more would be noticeable, and an increase of 1.5 dB or more would be noticeable where the ambient noise level exceeds 65 dB  $L_{dn}$ . The rationale for the Table 2 criteria is that, as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause annoyance.

## Criteria for Acceptable Noise Levels

### Rancho Cordova General Plan

Chapter 13 of the Rancho Cordova General Plan, Noise Element, provides noise level standards that are applicable to this project. The noise standards are divided into transportation and non-transportation categories of noise source, with different standards applied to non-transportation noise sources for daytime and nighttime periods. Because activities at the proposed Soccer Complex would be limited to daytime hours (7 am – 10 pm), only the daytime noise standards would be applicable to this project.

For the assessment of off-site traffic noise impacts on playgrounds and neighborhood parks, the City applies a 70 dB  $L_{dn}$  transportation noise exposure standard.

For noise generated by non-transportation noise sources, the City applies a 55 dB  $L_{eq}$  daytime noise standard at the exterior areas of sensitive receptors. This standard would be applicable to on-site parking lot noise generation at the nearest residences to the south. The noise standard is reduced by 5 dB if the source of noise consists of speech. Therefore, the noise standard applied



to soccer participants and spectators would be 50 dB  $L_{eq}$  at the sensitive exterior areas of the nearest residences.

As noted in the introduction, the exterior areas of the nearby commercial/professional uses (parking lots) are not considered noise-sensitive, but the interior spaces of those uses are considered sensitive for purposes of this analysis. However, the City's General Plan does not contain interior noise level standards for commercial/professional uses affected by non-transportation noise sources (such as the proposed project). As a result, this analysis utilizes the City's 45 dB  $L_{eq}$  interior noise level standard applicable to transportation noise sources for the evaluation of noise impacts within the nearby commercial/professional uses due to on-site activities.

### Rancho Cordova Noise Ordinance

Section 6.68.070 of the Rancho Cordova Noise Ordinance identifies exterior noise standards for on-site noise sources affecting noise-sensitive land uses. Specifically, the City provides a 50  $L_{eq}$  /  $L_{50}$  dB daytime noise level standard for noise-sensitive land use outdoor areas. This numeric standard includes a 5 dB adjustment for sources of noise consisting of speech, as identified in Section 6.68.070(C). This standard is consistent with the General Plan noise standard described above.

The City Noise Ordinance Standards also allow higher levels of noise to be generated depending on the duration of the hour the noise source is present. According to the Noise Ordinance, at no time shall daytime noise levels consisting of speech exceed 70 dB  $L_{max}$  at exterior areas of sensitive receptors.

As with the General Plan, the Rancho Cordova Noise Ordinance does not provide interior noise-level standards for commercial/professional uses affected by non-transportation noise sources. As a result, the Rancho Cordova General Plan 45 dB  $L_{eq}$  interior noise level standard described above is applied to the interior spaces of those uses.

### Noise Standards for Assessing Significance of Increases in Off-Site Traffic Noise

Neither the City's Noise Element or Noise Ordinance contain specific standards for assessing noise impacts resulting from increased traffic on local roadways which will be generated by the project. Therefore, the FICON criteria shown in Table 2 are utilized in this project. Those criteria apply a range of thresholds depending on baseline ambient conditions. Baseline ambient conditions are discussed in the following section.

### Existing (Baseline) Noise Environment

The existing noise environment within the overall project area varies by location and is defined primarily by traffic noise sources although intermittent aircraft overflights and other sources also affect the local noise environment.

To quantify the existing ambient noise environment, long-term (continuous) ambient noise level measurements were conducted on the project site on September 4<sup>th</sup> and 5<sup>th</sup>, 2015. The location of the continuous noise monitoring site is shown in Figure 1, identified as Site A.

A Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meter was used for the long-term ambient noise level measurement survey. The meter was calibrated before use with a LDL Model CAL200 acoustical calibrator prior to use to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute.

The results of the long-term ambient noise measurement survey are summarized in Table 3 with the detailed results provided in Appendix B.

<b>Table 3 Long-term Ambient Noise Level Monitoring Summary Kilgore Road Soccer Complex – Rancho Cordova</b>							
<b>Site<sup>1</sup></b>	<b>Measured Noise Levels, dBA<sup>2</sup></b>						<b>Notes/Source</b>
	<b>Daytime (7 a.m. to 10 p.m.)</b>			<b>Nighttime (10 p.m. to 7 a.m.)</b>			
	<b>L<sub>eq</sub></b>	<b>L<sub>max</sub></b>	<b>L<sub>50</sub></b>	<b>L<sub>eq</sub></b>	<b>L<sub>max</sub></b>	<b>L<sub>50</sub></b>	
A	56	69	55	51	63	49	White Rock and Kilgore Roads dominant noise source
Notes:							
<sup>1</sup> Noise monitoring location is shown on Figure 1. <sup>2</sup> Noise level descriptors (L <sub>eq</sub> , L <sub>max</sub> , L <sub>50</sub> ) are defined in Appendix A.							
Source: Bollard Acoustical Consultants, Inc. (BAC)							

## Standards of Significance Applied to this Project

The following standards of significance, which are based on the California Environmental Quality Act Guidelines (State CEQA Guidelines) in conjunction with adopted local noise policy and appropriate noise standards as described above, are applied to this project:

- a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan, or applicable standards of other agencies.

For off-site traffic noise affecting the proposed playing fields, the 70 dB L<sub>dn</sub> transportation noise standard of the Rancho Cordova General Plan is applied.

For on-site noise sources affecting nearby noise-sensitive areas, the following standards are applied:

- 50 dB L<sub>eq</sub> / 70 dB L<sub>max</sub> at exterior areas of residences.
- 45 dB L<sub>eq</sub> at interior areas of Commercial/Professional uses.

- b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

BAC field observations did not identify any appreciable sources of vibration or discernible vibration levels in the immediate project vicinity. Because the project does not proposed any substantive sources of vibration, an evaluation of vibration impacts associated with this project is not warranted.

- c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

For this project, the FICON standards of Table 1 are utilized. The ambient noise measurement results indicate baseline conditions in the immediate project vicinity are approximately 60 dB L<sub>dn</sub>. As a result, a 3 dB increase in ambient noise levels is considered significant according to the Table 1 criteria.

- d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above level existing without the project.

As for Significance Criteria C, a 3 dB increase in ambient noise levels is considered significant.

- 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 expose people residing or working in the project to excessive noise levels.

The project site is located within 2 miles of Mather Airport. However, analysis of established airport noise contours reveal that the location of the proposed project is well below the 70 dB L<sub>dn</sub> significance criteria applied to parks and playgrounds. As a result, additional evaluation of aircraft noise impacts with Mather Airport is not warranted for this project.

- f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project site to excessive noise levels.

No private airstrips were identified in the project vicinity so an evaluation of aircraft noise impacts associated with such facilities is not warranted for this project.

## Impacts and Mitigation Measures

For this project, noise impacts both due to and upon the proposed Kilgore Road Soccer Complex development are assessed. The following sections separately evaluate noise impacts due to and upon the project development.

## Off-Site Noise Impacts due to the Kilgore Road Soccer Complex

### Off-Site Traffic Noise Impact Evaluation

To assess off-site traffic noise impacts due to the project, peak hour traffic noise levels resulting from the project were computed using the FHWA Model, and those levels were compared against measured existing ambient noise levels.

As noted previously in this report, the long-term (continuous) noise measurement survey indicated existing ambient noise levels in the project vicinity were 56 dB  $L_{eq}$  during daytime hours. The peak hour traffic noise generation of the project was computed using the FHWA model to be 56 dB  $L_{eq}$  or less at the nearest receptors based on the assumption that the parking lot would fill or empty during a busy hour of playing field usage. Because predicted peak hour project traffic noise generation would be at or below existing traffic noise levels at the nearest sensitive receptors, off-site traffic noise impacts resulting from project-generated traffic are considered to be ***less than significant***.

### Playing Field Noise Impact Evaluation

To predict future noise exposure at the nearest residential land uses to the south of the proposed project area, as well as within interior spaces of nearest commercial buildings, BAC file data for similar playing fields and outdoor activities were used. Those data were projected from the effective noise center of the various soccer fields to the nearby receptors using accepted sound propagation algorithms (6 dB decrease per doubling of distance from the noise source). The receptor locations are shown on Figure 1, and are identified as receivers 1-4. The results of the outdoor playing field noise assessment at those receivers are shown in Table 4.

Receiver	Description	Distance from Center of Play Area, (feet)	Predicted Noise Levels at Nearest Receivers <sup>1</sup>		
			Location	$L_{50} / L_{eq}$	$L_{max}$
1	Commercial / Professional Building to North	725	Interior	18	--
2	Commercial / Professional Building to West	330	Interior	25	--
3	Commercial / Professional Building to South	700	Interior	18	--
4	Residences to South	1250	Exterior	38	48

1. Predicted levels are based on reference levels of 60 dB  $L_{eq}$  and 70 dB  $L_{max}$  at 100 feet & 6 dB per doubling of distance attenuation rate.  
Source: BAC

The Table 4 data indicate that average playing field noise levels would range from 18-25 dB  $L_{eq}$  within the nearest commercial/professional buildings to the project site. These levels are well below the 45 dB  $L_{eq}$  interior standard of significance.

The Table 4 data also indicate that average and maximum playing field noise levels would be approximately 38 dB  $L_{eq}$  and 48 dB  $L_{max}$ , respectively, at the nearest residences to the south. These levels are well below the 50 dB  $L_{eq}$  and 70 dB  $L_{max}$  exterior standard of significance.

Because predicted playing field noise levels would be well within compliance with both interior and exterior noise level standards at the nearest receptors to the project site, this impact is considered ***less than significant***.

**On-Site Circulation and Parking Lot Noise Impacts on Existing Noise-Sensitive Land Uses**

To predict future noise exposure from on-site circulation and parking lot activities at the nearest noise-sensitive receivers, BAC file data collected at parking lots were used. Those data were projected from the effective noise center of the parking lot to the nearby noise-sensitive land uses and buildings using accepted sound propagation algorithms (6 dB decrease per doubling of distance from the noise source). The receptor locations are shown on Figure 1, and are identified as receivers 1-4. The results of the outdoor playing field noise assessment at those receivers are shown in Table 5.

Receiver	Description	Distance from Center of Play Area, (feet)	Predicted Noise Levels at Nearest Receivers <sup>1</sup>		
			Location	$L_{50} / L_{eq}$	$L_{max}$
1	Commercial / Professional Building to North	550	Interior	13	--
2	Commercial / Professional Building to West	600	Interior	12	--
3	Commercial / Professional Building to South	1200	Interior	6	--
4	Residences to South	1700	Exterior	26	32

2. Predicted levels are based on reference levels of 70 dB SEL and 63 dB  $L_{max}$  per parking lot movement at a reference distance of 50 feet, 272 parking lot movements per hour, and a sound attenuation rate of 6 dB per doubling of distance.  
Source: BAC

The Table 5 data indicate that average parking lot noise levels would range from 6-13 dB  $L_{eq}$  within the nearest commercial/professional buildings to the project site. These levels are well below the 45 dB  $L_{eq}$  interior standard of significance.

The Table 5 data also indicate that average and maximum parking lot noise levels would be approximately 26 dB  $L_{eq}$  and 32 dB  $L_{max}$ , respectively, at the nearest residences to the south. These levels are well below the 50 dB  $L_{eq}$  and 70 dB  $L_{max}$  exterior standard of significance.

Because predicted parking lot noise levels would be well within compliance with both interior and exterior noise level standards at the nearest receptors to the project site, this impact is considered ***less than significant***.

## Traffic Noise Impacts upon the Playing Fields

As noted in the Criteria Section of this report, Rancho Cordova General Plan requires that future traffic noise levels in new playgrounds and neighborhood parks not exceed 70 dB L<sub>dn</sub> at outdoor activity areas.

To evaluate traffic noise exposure at the proposed soccer fields, the long-term ambient noise level data collected at noise measurement Site A shown on Figure 1 were utilized. The results of the ambient monitoring at Site A indicate a measured noise level of 59 L<sub>dn</sub> at the project site. Because this level is well below the 70 dB L<sub>dn</sub> noise standard applied by the City of Rancho Cordova to parks and playing fields affected by transportation noise sources, this impact is considered ***less than significant***.

## Construction Noise Impact Evaluation

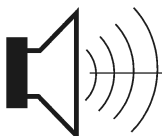
During the construction phases of the project, noise from on-site construction activities, including infrastructure construction, grading, and parking lot paving, would add to the noise environment in the project vicinity.

Activities involved in construction would typically generate maximum noise levels ranging from 85 to 90 dB at a distance of 50 feet. Noise would also be generated during the construction phase by increased truck traffic on area roadways.

Provided construction activities occur between the hours of 6 am – 8 pm during weekdays, and 7 am – 8 pm on weekends, construction activities would be exempt from the provisions of the Rancho Cordova Noise Ordinance (6.68.090(E)). Because on-site construction activities are proposed to adhere to the City's requirements, no adverse on-site or off-site construction noise effects are identified for this project and this impact is considered ***less than significant***.

## Appendix A Acoustical Terminology

<b>Acoustics</b>	The science of sound.
<b>Ambient Noise</b>	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
<b>Attenuation</b>	The reduction of an acoustic signal.
<b>A-Weighting</b>	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
<b>Decibel or dB</b>	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
<b>CNEL</b>	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
<b>Frequency</b>	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
<b>L<sub>dn</sub></b>	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
<b>Leq</b>	Equivalent or energy-averaged sound level.
<b>L<sub>max</sub></b>	The highest root-mean-square (RMS) sound level measured over a given period of time.
<b>Loudness</b>	A subjective term for the sensation of the magnitude of sound.
<b>Masking</b>	The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.
<b>Noise</b>	Unwanted sound.
<b>Peak Noise</b>	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the Maximum level, which is the highest RMS level.
<b>RT<sub>60</sub></b>	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
<b>Sabin</b>	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 sabin.
<b>SEL</b>	A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy of the event into a 1-s time period.
<b>Threshold of Hearing</b>	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
<b>Threshold of Pain</b>	Approximately 120 dB above the threshold of hearing.



B O L L A R D

Acoustical Consultants

**Appendix B-1**  
**Kilgore Soccer Complex**  
**Ambient Noise Monitoring Results - Site A**  
**12/4/2015 to 12/5/2015**

Hour	Leq	Lmax	L50	L90
12:00	55.43	73	53	50
13:00	54.18	72	53	50
14:00	54.64	71	53	49
15:00	56.24	72	54	51
16:00	57.55	70	57	53
17:00	57.69	65	57	55
18:00	57.55	70	57	55
19:00	56.92	63	57	55
20:00	55.85	64	55	53
21:00	55.46	75	54	52
22:00	53.13	70	53	50
23:00	52.43	62	52	49
0:00	48.67	61	48	46
1:00	48.57	61	48	45
2:00	48.97	63	47	44
3:00	46.84	58	45	43
4:00	47.39	59	46	43
5:00	50.95	64	49	46
6:00	54.57	69	53	50
7:00	56.63	66	56	54
8:00	55.77	66	55	53
9:00	55.03	68	54	51
10:00	53.04	65	52	49
11:00	53.72	69	52	48

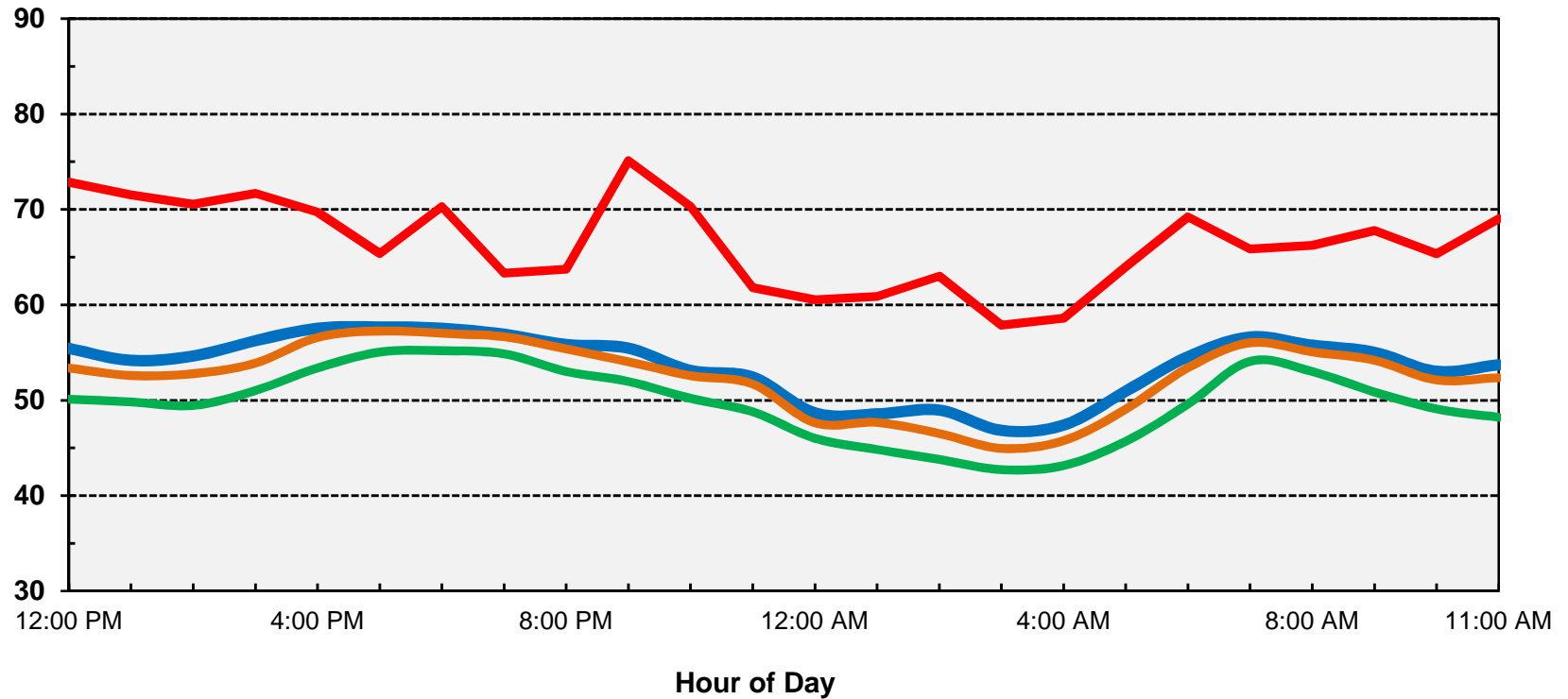
	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	58	53	56	55	47	51
Lmax (Maximum)	75	63	69	70	58	63
L50 (Median)	57	52	55	53	45	49
L90 (Background)	55	48	52	50	43	46

Computed Ldn, dB	59
% Daytime Energy	84%
% Nighttime Energy	16%



Appendix B-2  
Kilgore Soccer Complex  
Ambient Noise Monitoring Results - Site A  
12/4/2015 to 12/5/2015

Sound Level, dBA



— Average (Leq) — Maximum (Lmax) — L50 — L90

Ldn: 59 dB



# **APPENDIX I – TRIP GENERATION ASSESSMENT**



June 20, 2016

Ms. Meredith Branstad  
**Foothill Associates**  
590 Menlo Drive, Suite 5  
Rocklin, CA 95765

**RE: TRIP GENERATION ASSESSMENT FOR SAN JUAN SOCCER CLUB (SJSC)  
FACILITY IN RANCHO CORDOVA, CA**

Dear Ms. Branstad:

Thank you for contacting our firm regarding the four-field soccer complex proposed by the San Juan Soccer Club (SJSC) on a site adjoining Kilgore Road in Rancho Cordova. As we have discussed, the City has asked for a preliminary trip generation analysis in order to determine the breadth of any subsequent traffic study needed to address the project's impacts under CEQA.

We understand that the City is interested in a peak hour and daily projection. The City's standard guidelines suggest analysis if a project generates more than 100 trips in the peak hour or more than 1,000 daily trips. This analysis is intended to determine whether justification exists for further traffic impact analysis.

### **Background Information**

**Description.** The proposed project is a standalone soccer complex to be constructed on the east side of Kilgore Road in the area between White Rock Road to the north and International Drive to the south. The adjoining land uses in this area of Rancho Cordova consist primarily of office / business parks, although a residential area is located roughly ¼ mile south of the project.

The project proposes two full size fields, a junior field and a fourth smaller "tot" field. The complex will have 280 off-street parking spaces.

**Operational Characteristics.** We have discussed the proposed project with SJSC representatives in order to gain an understanding of its use on normal weekdays, on weekends and during special weekend events.

SJSC will use the fields on weekdays for evening practice by teams of various ages. The field will likely see practice in two shifts, with younger teams occupying the site from roughly 5:30 p.m. to 7:00 p.m. and older teams taking over later in the evening. Practices could typically involve up to 15 persons per team and the fields could accommodate three teams at a time as the small fourth field would not be used. A field might occasionally be used for weekday matches, but this would be the exception.

The field would be used for Saturday matches during the competitive season. Teams would be scheduled beginning at 9:00 a.m. and would occupy the fields in 1½ hour time blocks until about 5:00 p.m. Regular evening matches are not anticipated. At any time there could be six to eight teams on the field and another six to eight teams traveling to or from the site, depending on use of the small field.

The site may occasionally be used for tournaments, and teams might expect to play more than one match per day during a tournament. However a facility of this size would not host major tournaments with day long attendance by teams and spectators, and the travel activity associated with tournaments would be similar to that accompanying regular SJSC weekend use.

### **Trip Generation Estimates**

**Vehicular Trip Generation Estimate - ITE.** Traffic engineers regularly estimate the amount of vehicle traffic accompany new land uses based on observation of similar facilities. Either based on national or regional research or based on direct observation. The Institute of Transportation Engineers (ITE) publication *Trip Generation Manual, 9<sup>th</sup> Edition*, is the most commonly cited source, and this document is regularly accepted by the City of Rancho Cordova.

Table 1 identifies the trip generation rates published by ITE for “soccer complex” on a “per field” basis. These rates have been applied to the proposed project on a “worst case” basis assuming that the fourth field generates automobile traffic. As indicated, on a weekday the facility may generate 286 trips (i.e., ½ inbound and ½ outbound), with 71 trips occurring during the weekday peak commute hour (i.e., 4:00 to 6:00 p.m.). ITE data suggest that the complex could generate 121 trips during the hour on Saturday with the highest traffic volume.

**Vehicle Trip Generation Estimate - Davis Legacy Tournament.** The Davis Soccer Club operates a large nine field complex off of Interstate 80 in Yolo County, and its trip generation was observed during a large tournament as part of a traffic impact analysis addressing a potential site expansion. That multiday tournament ran from 7:00 a.m. to 7:00 p.m. and attracted teams from throughout the western region, as well as support staff, parents and other spectators. Thus while this level of activity is not anticipated at the SJSC, a forecast based on the Davis experience provides additional perspective.

During the hour of greatest volume, the Davis tournament generated 56.44 trips per field. If this type of regional tournament was held, it is unlikely that the small field at SJSC would be used, and three fields in active use could generate 169 peak hour trips.

KDA

**TABLE 1  
 TRIP GENERATION AND PARKING FORECASTS  
 BASED ON INSTITUTE OF TRANSPORTATION ENGINEERS (ITE) DATA FOR SOCCER COMPLEX  
 AND OBSERVATION OF DAVIS LEGACY TOURNAMENT**

Code	Time Period	Unit	Vehicle Trips Per Unit						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
488	Weekday	field	71.33	57%	43%	1.12	67%	33%	17.70
	Saturday	field	-	-	-	-	48%	52%	30.34
	Saturday – Davis Legacy <sup>(1)</sup>	field	-	-	-	-	48%	52%	56.44
	San Juan Soccer Club - Weekday	4 fields	286	3	2	5	48	23	71
	San Juan Soccer Club - Saturday	4 fields	-	-	-	-	58	63	121
	San Juan Soccer Club – Saturday <sup>(1)</sup>	3 fields	-	-	-	-	81	88	169
Code	Time Period	Unit	Parked Vehicles per unit						
488	Peak Occurrence	field	58.80						
	Saturday – Davis Legacy <sup>(1)</sup>	field	81.90						
	San Juan Soccer Club - Saturday	4 fields	235						
	San Juan Soccer Club – Saturday <sup>(1)</sup>	3 fields	246						
<sup>(1)</sup> Based on trip generation rates observed May 9, 2015 at Davis Legacy Tournament									

*KDA*

**Vehicular Trip Generation Estimate – Proposed Occupancy and Schedule at SJSC.**

Because there is no way to know the level of use that occurred with the fields observed as part of ITE data collection and the Davis Legacy observations are not directly relatable to the proposed SJSC facility, it is important to validate these estimates based on consideration of SJSC’s anticipated schedule. It is possible to estimate trip generation based on the project’s anticipated operating schedule, number of team members and anticipated automobile occupancy rates, and estimates have been made in this manner to validate the ITE forecast.

Table 2 identifies trip generation estimates for the project based on the typical operating parameters anticipated by SJSC. As noted each team can have up to 15 members and usually a single coach. Because the teams are drawn from a broad area, members from specific region often carpool, and an average automobile occupancy rate of 1.5 members per automobile has been assumed. Based on this assumption, eleven automobiles would arrive for a practice or a match, and the same number would leave after the event. The first practice shift would be expected to arrive during the weekday commute period and 44 vehicles would be anticipated driving to the site if all four fields were used. This forecast is below the ITE projection.

Assuming four teams practice in two shifts, a total of 176 trips (i.e., ½ inbound and ½ outbound) would occur over the course of the day. This forecast is less than the estimate from ITE data.

<b>TABLE 2 TRIP GENERATION BASED ON OPERATING SCHEDULE</b>				
	<b>Day</b>	<b>Quantity</b>	<b>Trips before or after event</b>	<b>Total</b>
Members per team		15		
Team members per automobile		1.5	10	
Coaches per team		1		
Coaches per automobile		1	1	
Total			11	
Parked vehicles per team			11	
Team at complex at one time	weekday	4	44	
Commute hour trips	weekday		<b>44 per hour</b>	
Total inbound and outbound trips	weekday			<b>176 daily</b>
Trips per field per match	Saturday		44	
Trips in highest volume hour	Saturday		<b>176 per hour</b>	

The extent of project trip generation on Saturdays with multiple teams participating can be estimated similarly. Typically, in any hour two teams could be arriving to play on each field and two teams would be leaving after a match. Thus each field would generate 22 inbound and 22 outbound trips per hour. If all four fields were used, then there would be 88 inbound vehicles

*KDA*



and 88 outbound vehicles during each cycle of play, or 176 total trips in that hour. This forecast is greater than the ITE based estimate.

The number of vehicle trips over the course of Saturday will depend on how many matches are scheduled on each field. If matches begin at 9:00 and are done by 5:00 p.m. and go off on 1½ hour intervals, then each field could host seven (7) matches. Theoretically, 28 matches could occur per day, again assuming the small fourth field is used all day. At 44 trips per match, the complex might generate 1,232 daily trips on Saturday. If the small field is infrequently used, the estimate could drop to as low as 924 daily trips.

### **Parking**

**Parking Demand - ITE.** The ITE publication Parking Generation, 4<sup>th</sup> Edition, contains information regarding the number of vehicles parked on a Saturday at soccer complexes. The average peak period rate is 58.8 vehicles per field, which if applied to all four fields would suggest 235 parked vehicles at one time.

**Parking Demand – Davis Legacy Experience.** Parking utilization was also monitored at the May 2015 tournament hosted at Davis Legacy. The observed maximum parking demand rate was 81.90 vehicles per field. Again assuming that the two large and one junior field were employed, the SJSC facility could generate 246 parked cars if this type of tournament was held.

**Parking – Proposed Occupancy and Schedule.** The operational characteristics of the SJSC facility can also be used to estimate the concurrent parking demand occurring on Saturdays. Assuming all four fields are in use there could be 88 vehicles associated with the eight teams that are playing. However, another 88 vehicles on site would be associated with the other teams that have just ended a match or teams that are arriving for the match following the teams that are playing. Thus, we would expect 176 parked cars on this basis.

### **Assessment / Conclusions**

**Weekday Trip Generation.** Under any approach, the number of vehicles trips occurring on weekdays during peak commute hours falls well below the 100 trip threshold employed by the City of Rancho Cordova to determine whether subsequent analysis is needed. Similarly, the regular weekday trip generation on a daily basis falls well below the 1,000 trip threshold employed by the City. Thus, analysis of the project's traffic impacts during those time periods is not justified.

**Weekend Trip Generation.** The number of trips generated by the facility will be greater on weekends than on weekdays, and the facility may be used all day. On a peak hour basis, the project's trip generation is likely to exceed the 100 trip threshold, and the number of daily trips on Saturday may approach or exceed the 1,000 daily trip threshold depending on how the fields are used.

KDA

The extent to which further analysis is needed should be considered within the context of Saturday traffic conditions in the area of Rancho Cordova and the adequacy of the project's on-site parking supply. Because surrounding land uses are primarily office park & light industrial, minimal traffic occurs on Kilgore Road on Saturdays. Similarly, weekend volumes on major regional corridors serving this area such as White Rock Road and Sunrise Blvd are less than those that occur during typical weekday commute periods. Thus, it is reasonable to conclude that even if the SJSC facility's trip generation forecast exceeds City volume thresholds on Saturday a significant impact on the regional circulation system is unlikely.

Locally, traffic impacts might theoretically occur if the project's on-site parking supply were inadequate and congestion spilled over onto Kilgore Road. However, the project's proposed parking supply (i.e., 280 spaces), exceeds the anticipated demand estimates based on ITE data, as well as estimates based on SJSC's expected operation and Davis Legacy experience. Thus, it is reasonable to conclude that Saturday use of the facility will not result in local traffic issues that would need to be addressed by further analysis.

Thank you again for your call. Please feel free to contact me if you have any questions.

Sincerely Yours,

**KD Anderson & Associates, Inc.**

A handwritten signature in black ink, appearing to read 'K. Anderson', with a long horizontal flourish extending to the right.

Kenneth D. Anderson, P.E.  
President

December 12, 2016

Ms. Meredith Branstad  
**Foothill Associates**  
590 Menlo Drive, Suite 5  
Rocklin, CA 95765

**RE: SAN JUAN SOCCER CLUB (SJSC) FACILITY IN RANCHO CORDOVA, CA:  
ADDENDUM RELATING TO INTERSECTION LEVEL OF SERVICE  
ANALYSIS**

Dear Ms. Branstad:

This letter supplements our June 20, 2016, August 16, 2016 and November 18, 2016 letters regarding the soccer complex proposed by the San Juan Soccer Club (SJSC) on a site adjoining Kilgore Road in Rancho Cordova, as shown in Figure 1. As we have discussed, this additional information identifies the intersection operating Levels of Service with and without the proposed project at the two main intersections adjoining the project site under two scenarios:

- Weekday evening from 5:15 to 6:15 p.m. which captures the travel of teams leaving after early practice and other teams arriving for subsequent practice, and
- Saturday afternoon (2:15 to 3:30 p.m.) during the time period between matches if concurrent club play occurs on all four fields.

### **Background Information**

**Study locations.** This analysis addresses two intersections:

1. Kilgore Road / White Rock Road
2. Kilgore Road / International Drive

**Traffic Volume Data:** Weekday evening traffic counts were conducted at each intersection from 5:00 to 7:00 p.m. and Saturday volumes was observed from 2:15 to 3:30 p.m. with the information tabulated into 15 minute increments. The volumes occurring in the period from 5:15 to 6:15 were selected as the time period would capture teams arriving for a practice beginning at 6:00 as well as teams leaving after an early weekday practice that ended at 6:00 p.m. The Saturday time period captures typical midday conditions.

Figure 2 presents traffic count results. The total entering volume at the Kilgore Road / White Rock Road intersection totaled 1,766 vehicles per hour (vph) on the weekday evening, while the volume at the Kilgore Road / International Drive intersection was 1,513 vph. The volume occurring in this area on Saturday afternoons was expected to be less due to the nature of

adjoining businesses (office / light industrial), and the Kilgore Road / White Rock Road intersection was counted on Saturday for confirmation. The total entering volume on Saturday afternoon was 899 vehicles per hour, which is roughly half of the weekday p.m. volume. This ratio was applied to the weekday volumes at the Kilgore Road / International Drive intersection to produce midday Saturday volumes at this location.

**Background Levels of Service.** The operating Level of Service at the study intersections was calculated using methodology contained in the 2010 Highway Capacity Manual (HCM). This is the methodology typically employed for traffic impact analyses under City guidelines.

Table 1 summarizes the results of this analysis. As shown the study intersections operate at LOS B in both the weekday and Saturday analysis periods. These conditions satisfy the City of Rancho Cordova’s minimum LOS D standard.

TABLE 1 EXISTING INTERSECTION LEVELS OF SERVICE					
Intersection	Control	Level of Service			
		Weekday 5:15 to 6:15 p.m.		Saturday 2:15 to 3:15 p.m.	
		Average Delay (sec/veh)	Level of Service	Average Delay (sec/veh)	Level of Service
Kilgore Road / White Rock Road	Signal	19.4	B	13.5	B
Kilgore Road / International Drive	Signal	17.0	B	15.9	B

**Project Characteristics**

Our previous letters have considered the probable trip generation characteristics of the proposed project based on anticipated participation by club teams, the likely schedules for practice and Saturday play and observed automobile occupancy rates. That data was employed previously to determine the project trip generations occurring during typical weekday commute hours (i.e., 4:00 to 6:00 p.m.) for use in considering potential project impacts under City traffic study guidelines.

For this analysis the previous information has been expanded for additional time periods in order to provide a basis for evaluating conditions occurring during the “peak hour of the generator”. This condition would represent probable maximum project trip generation, which may occur when background traffic is less than the identified peak hour.

**Concurrent Peak Hour Practice.** The data provided by San Juan Soccer Club indicated the number of clubs that will be using the fields at various times on weekdays. The practice schedules are staggered with 1½ or 2-hour time blocks beginning at 4:00, 4:30, 5:00, 6:00 and 7:00 p.m.

KDA

Club data identified the number of persons currently assigned to each club. This data was used to identify probable trip generation, and a maximum number of persons per club was identified by the consultant for use in identifying a “worst case” condition as well.

As indicated in Table 2, the greatest amount of travel will occur during the hour from 5:15 to 6:15 p.m. Club data indicated a total of 145 persons were traveling at that time, and under the maximum team size assumptions we have made this total might reach 175 persons traveling.

TABLE 2 PEAK HOUR TRAVEL TO / FROM PROJECT							
Travel Hour	Practice Time	Club	Teams	Persons	Total Persons Max (observed)		
					In	Out	Total
3:30 to 4:30 p.m.	4:00 to 6:00 p.m.	LO6*	2	32 (26)	85 (69)	0	85 (69)
	4:30 to 6:00 p.m.	U8*, LO8*, 03A**	3	53 (43)			
4:00 to 5:00 p.m.	4:30 to 6:00 p.m.	U8*, LO8*, U3A**	3	53 (43)	114 (93)	0	114 (93)
	5:00 to 7:00 p.m.	O3E**,SO2**,SO1**	3	63 (50)			
4:30 to 5:30 p.m.	5:00 to 7:00 p.m.	O3E**,SO2**,SO1**	3	63 (50)	63 (50)	0	63 (50)
5:00 to 6:00 p.m.	6:00 to 8:00 p.m.	LO5*, LO7*, 04***	5	90 (76)	90 (76)		90 (76)
5:15 to 6:15 pm	4:00 to 6:00 p.m.	LO6*	2	32(26)		32 (26)	175 (145)
	4:30 to 6:00 p.m.	U8*, LO8*,03A**	3	53 (43)		53 (43)	
	6:00 to 8:00 p.m.	LO5*,LO7*, 04***	3	90 (76)	90 (76)		

(\*) “worst case” assumes maximum 15 persons and 1 coach per team (\*\*) assumes 20 persons and 1 coach per team (\*\*\*) assumes 25 persons and 1 coach per team

**Weekday PM Peak Hour Trip Generation Forecast.** The average automobile occupancy rate identified from club data was 1.23 persons per vehicle. Applying this rate to the travel forecast indicated that under the “worst” scenario a total of 73 vehicles would be traveling to the project and 69 vehicles would be leaving during the period from 5:15 to 6:15 p.m.

**Saturday Peak Hour Trip Generation.** The extent of project trip generation on Saturdays with multiple teams participating can be estimated similarly. In any hour two teams could be arriving to play on each field and two teams would be leaving after a match. Thus at the average occupancy rate (1.23 per automobile) with a “worst case” maximum of 15 persons and a coach on a team plus two cars with “fans”, three at the fields would each generate 30 inbound and 30 outbound trips. A “worst case” 20 persons, a coach and fans on one field would generate 38 inbound and 38 outbound trips per hour. If all four fields were used, then there would be 128 inbound vehicles and 128 outbound vehicles during each cycle of play, or 256 total trips in that hour.

KDA

**Trip Distribution Characteristics.** Having identified the number of project trips, it remained to identify the routes that these trips would use to travel to and from the site. The San Juan Soccer Club attracts team members from throughout the five county Sacramento Metropolitan Area. As a result, US 50 is the primary regional route used to reach the site, and Zinfandel Drive and Sunrise Blvd are the primary links from the freeway to the site.

Table 3 summarizes the trip distribution assumptions made for this assessment. As shown, roughly ¾ of the total traffic is expected to arrive from the north and pass through the White Rock Road / Kilgore Road intersection to reach the site. The other ¼ will arrive from the south via the Kilgore Road / International Drive intersection.

<b>TABLE 3 TRIP DISTRIBUTION ASSUMPTIONS</b>			
<b>Direction</b>	<b>Regional Route</b>	<b>Route to site</b>	<b>Percent of Total traffic</b>
North	Sunrise Blvd north of US 50	Sunrise Blvd to White Rock Road	20%
	Folsom Blvd to Kilgore Road	Kilgore Road	4%
East	US 50	Sunrise Blvd to White Rock Road	16%
West	US 50	Zinfandel Drive to White Rock Road	36%
	Matherfield Road	International Drive	8%
South	Sunrise Blvd	International Drive	10%
	Zinfandel Drive	International Drive	2%
	Kilgore Road	Kilgore Road south of International Drive	4%
Total			100%

Figure 3 presents “Project Only” traffic assigned to the two study area intersections under these assumptions.

**Existing Plus Project Levels of Service.** The Level of Service impacts associated with the proposed project were identified by superimposing project traffic onto the background condition and recalculating the Level of Service at each location. Figure 4 presents these traffic volumes. While the project may generate more traffic in terms of vehicles per hour on a Saturday, because background traffic volumes are much lower, the resulting Existing plus Project totals will remain greater during the weekday evening period.

Table 4 compares existing Levels of Service at each intersection with conditions occurring if the proposed project is operating under the “worst case” assumptions made herein. As indicated because each intersection has multiple lanes and relatively high capacity, the addition of project trips has a relatively minor effect on the length of delays, and the overall Level of Service will not change. The City’s minimum LOS D standard will continue to be satisfied, and the San Juan Soccer Club project’s impacts are not significant.

KDA

**TABLE 4  
 EXISTING PLUS SAN JUAN SOCCER CLUB PROJECT INTERSECTION LEVELS OF SERVICE**

Intersection	Control	Level of Service							
		Weekday 5:15 to 6:15 p.m.				Saturday 2:15 to 3:15 pm			
		Average Delay (sec/veh)	Level of Service	Average Delay (sec/veh)	Level of Service	Average Delay (sec/veh)	Level of Service	Average Delay (sec/veh)	Level of Service
Kilgore Rd / White Rock Rd	Signal	19.4	B	20.8	B	13.5	B	15.0	B
Kilgore Rd / International Dr	Signal	17.0	B	17.3	B	15.9	B	16.4	B

KDA

*Ms. Meredith Branstad*  
**Foothill Associates**  
*December 22, 2016*  
*Page 6*

Please feel free to contact me if you have any questions.

Sincerely Yours,

**KD Anderson & Associates, Inc.**

A handwritten signature in black ink, appearing to read 'K. Anderson', with a long horizontal flourish extending to the right.

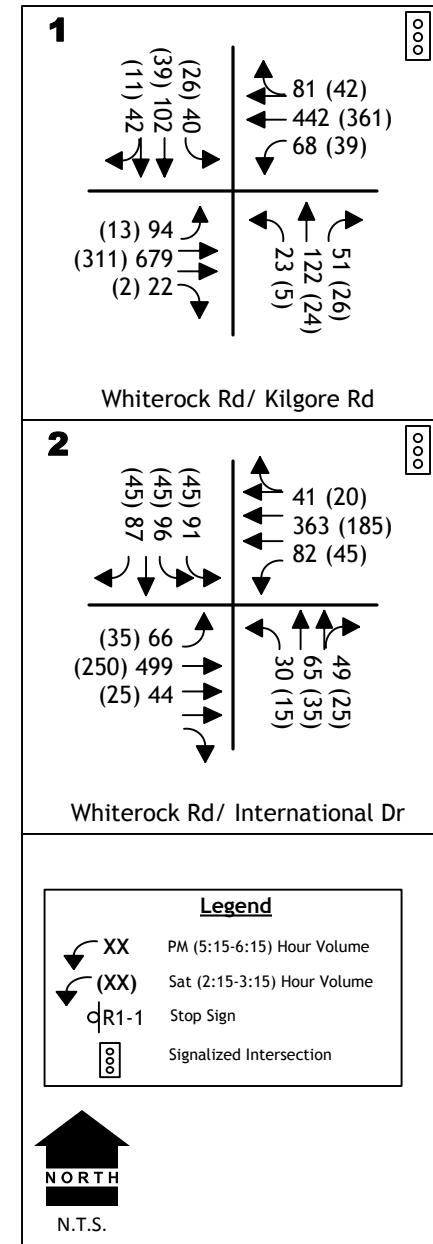
Kenneth D. Anderson, P.E.  
President

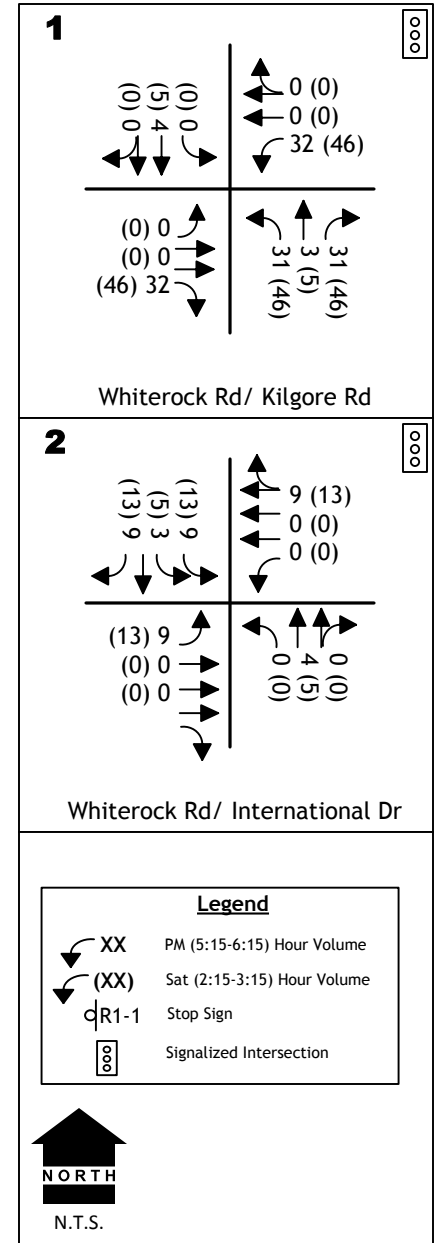
Attachments: figures, traffic volume counts, LOS calculation worksheets





VICINITY MAP





## PROJECT ONLY TRAFFIC VOLUMES AND LANE CONFIGURATIONS

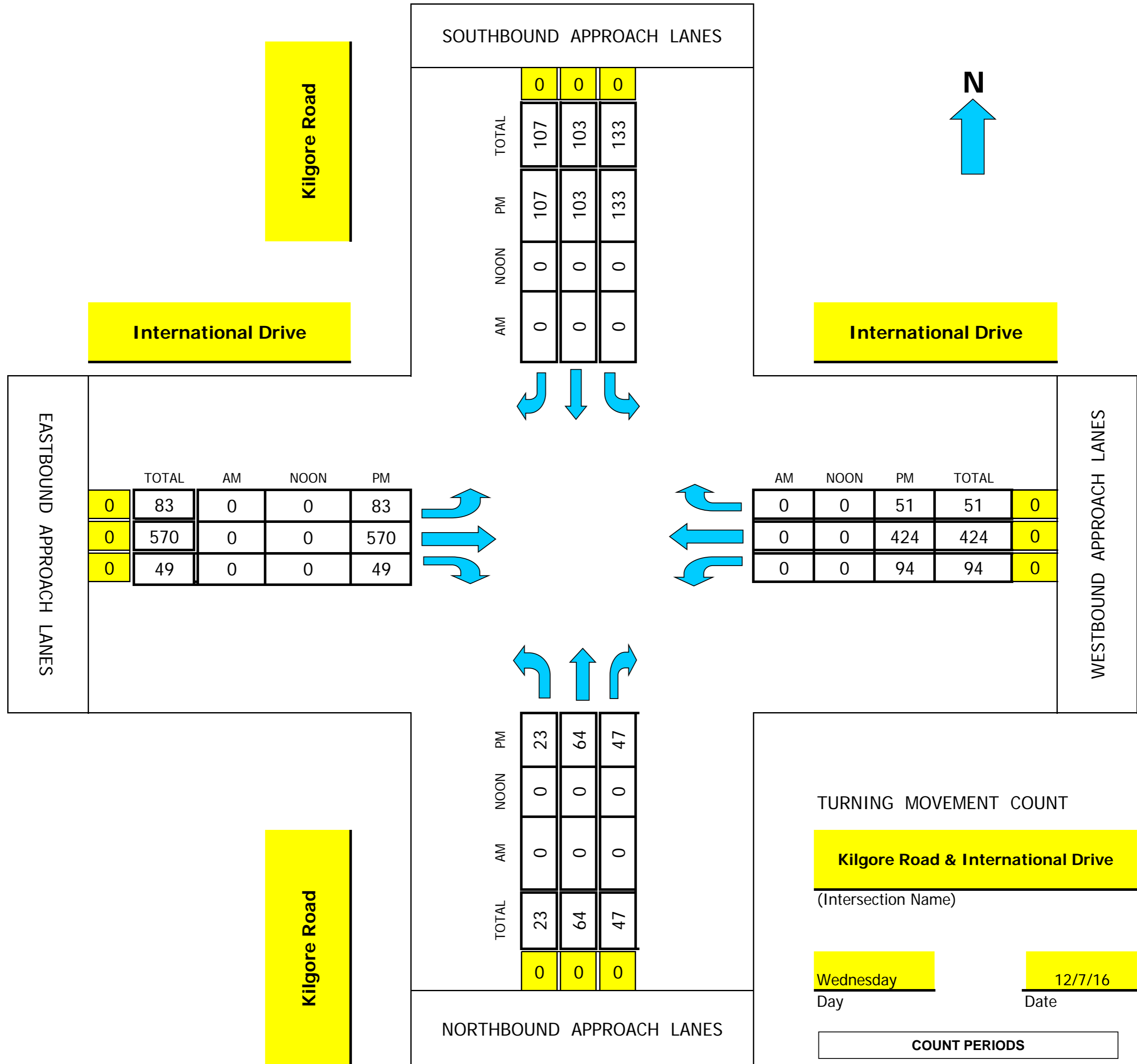


# Intersection Turning Movement

Prepared by:  
KD Anderson Associates, Inc.

## TMC Summary of Kilgore Road/International Drive

Project #:



AM PEAK HOUR 0 AM

NOON PEAK HOUR 0 AM

PM PEAK HOUR 500 PM

# Intersection Turning Movement

Prepared by:

N-S STREET: Kilgore Road

DATE: 12/7/16

LOCATION: Rancho Cordova

E-W STREET: International Drive

DAY: WEDNESDAY

PROJECT#

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM													
4:30 PM													
4:45 PM													
5:00 PM	2	16	11	53	31	36	28	174	14	29	138	16	548
5:15 PM	6	16	15	49	29	30	27	182	17	24	114	17	526
5:30 PM	8	10	11	15	25	24	12	123	4	17	91	7	347
5:45 PM	7	22	10	16	18	17	16	91	14	24	81	11	327
6:00 PM	9	17	13	11	24	16	11	103	9	17	77	6	313
6:15 PM	6	12	17	11	15	18	9	89	9	20	62	7	275
6:30 PM	3	14	10	13	13	11	9	64	17	15	59	8	236
6:45 PM	4	12	11	9	8	5	8	55	9	13	37	9	180

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	45	119	98	177	163	157	120	881	93	159	659	81	2752

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	23	64	47	133	103	107	83	570	49	94	424	51	1748
PEAK HR. FACTOR:		0.859		0.715			0.777			0.777			0.797

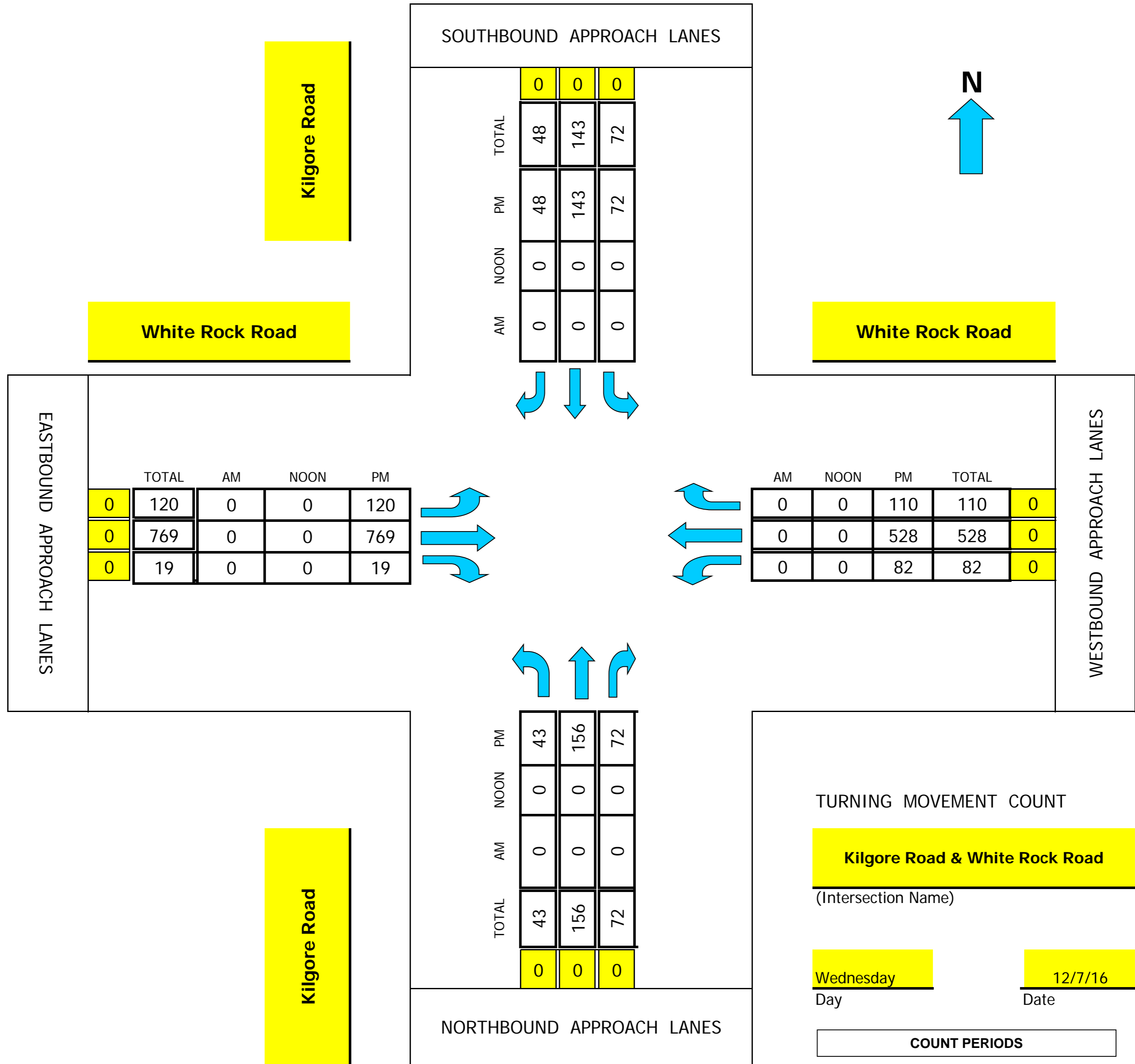
CONTROL:

# Intersection Turning Movement

Prepared by:  
KD Anderson Associates, Inc.

## TMC Summary of Kilgore Road/White Rock Road

Project #:



AM PEAK HOUR 0 AM

NOON PEAK HOUR 0 AM

PM PEAK HOUR 500 PM

# Intersection Turning Movement

Prepared by:

N-S STREET: Kilgore Road

DATE: 12/7/16

LOCATION: Rancho Cordova

E-W STREET: White Rock Road

DAY: WEDNESDAY

PROJECT#

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM													
4:30 PM													
4:45 PM													
5:00 PM	25	59	33	41	57	17	45	220	6	28	176	43	750
5:15 PM	6	40	19	16	34	15	32	198	8	31	119	25	543
5:30 PM	7	25	9	10	32	3	22	187	1	12	106	22	436
5:45 PM	5	32	11	5	20	13	21	164	4	11	127	20	433
6:00 PM	5	25	12	9	16	11	19	130	9	14	90	14	354
6:15 PM	4	10	9	5	20	8	20	85	1	13	72	8	255
6:30 PM	5	11	7	4	9	4	5	87	5	5	54	6	202
6:45 PM	2	8	8	5	6	6	6	78	0	5	53	4	181

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	59	210	108	95	194	77	170	1149	34	119	797	142	3154

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	43	156	72	72	143	48	120	769	19	82	528	110	2162
PEAK HR. FACTOR:		0.579			0.572			0.838			0.729		0.721

CONTROL:

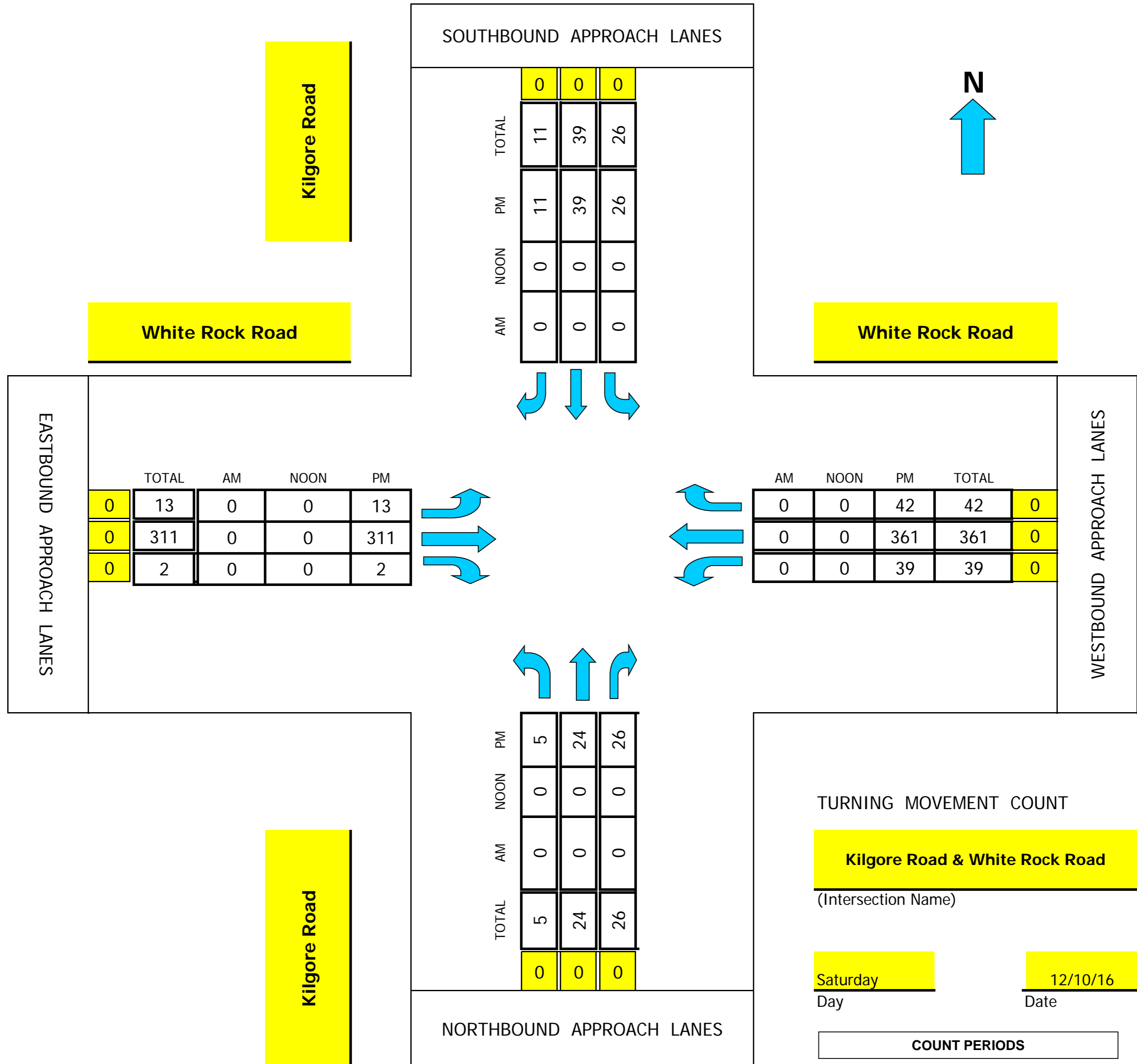


# Intersection Turning Movement

Prepared by:  
KD Anderson Associates, Inc.

## TMC Summary of Kilgore Road/White Rock Road

Project #: 3358-021



AM PEAK HOUR 0 AM

NOON PEAK HOUR 0 AM

PM PEAK HOUR 215 PM

# Intersection Turning Movement

Prepared by:

N-S STREET: Kilgore Road

DATE: 12/10/16

LOCATION: Rancho Cordova

E-W STREET: White Rock Road

DAY: SATURDAY

PROJECT# 3358-021

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM	1	8	2	8	13	2	6	92	0	16	95	16	259
2:30 PM	0	10	10	7	5	3	4	67	0	11	79	9	205
2:45 PM	2	1	5	6	13	2	2	83	1	9	93	10	227
3:00 PM	2	5	9	5	8	4	1	69	1	3	94	7	208
3:15 PM	1	2	4	8	15	2	5	69	1	6	78	6	197
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM													
4:30 PM													
4:45 PM													
5:00 PM													
5:15 PM													
5:30 PM													
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	6	26	30	34	54	13	18	380	3	45	439	48	1096

PM Peak Hr Begins at: 215 PM

PEAK VOLUMES =	5	24	26	26	39	11	13	311	2	39	361	42	899
PEAK HR. FACTOR:		0.688			0.826			0.832			0.870		0.868

CONTROL:























HCM 2010 Signalized Intersection Summary  
 1: Kilgore Rd & White Rock Rd

Existing PM  
 12/12/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	679	22	68	442	81	23	122	51	40	102	42
Future Volume (veh/h)	94	679	22	68	442	81	23	122	51	40	102	42
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	102	738	24	74	480	88	25	133	55	43	111	46
Adj No. of Lanes	1	2	1	1	3	0	1	1	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	1402	627	97	1599	287	201	211	180	161	225	89
Arrive On Green	0.08	0.40	0.40	0.05	0.37	0.37	0.11	0.11	0.11	0.09	0.09	0.09
Sat Flow, veh/h	1774	3539	1583	1774	4338	778	1774	1863	1583	1774	2480	980
Grp Volume(v), veh/h	102	738	24	74	373	195	25	133	55	43	78	79
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1695	1725	1774	1863	1583	1774	1770	1690
Q Serve(g_s), s	3.5	9.8	0.6	2.5	4.8	5.0	0.8	4.2	2.0	1.4	2.6	2.8
Cycle Q Clear(g_c), s	3.5	9.8	0.6	2.5	4.8	5.0	0.8	4.2	2.0	1.4	2.6	2.8
Prop In Lane	1.00		1.00	1.00		0.45	1.00		1.00	1.00		0.58
Lane Grp Cap(c), veh/h	135	1402	627	97	1249	636	201	211	180	161	161	153
V/C Ratio(X)	0.76	0.53	0.04	0.76	0.30	0.31	0.12	0.63	0.31	0.27	0.48	0.52
Avail Cap(c_a), veh/h	563	3765	1684	863	3573	1818	995	1045	888	998	996	951
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	14.2	11.4	28.7	13.8	13.8	24.5	26.0	25.0	26.0	26.6	26.7
Incr Delay (d2), s/veh	8.4	0.3	0.0	11.5	0.1	0.3	0.3	3.1	1.0	0.9	2.2	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	4.8	0.3	1.5	2.2	2.4	0.4	2.3	0.9	0.7	1.4	1.4
LnGrp Delay(d),s/veh	36.3	14.5	11.4	40.2	13.9	14.1	24.8	29.1	26.0	26.9	28.8	29.3
LnGrp LOS	D	B	B	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		864			642			213			200	
Approach Delay, s/veh		17.0			17.0			27.8			28.6	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.2	27.9		12.5	8.5	29.6		11.0				
Change Period (Y+Rc), s	5.5	* 5.2		5.5	* 5.1	* 5.2		5.4				
Max Green Setting (Gmax), s	19.5	* 65		34.5	* 30	* 65		34.6				
Max Q Clear Time (g_c+H1), s	5.5	7.0		6.2	4.5	11.8		4.8				
Green Ext Time (p_c), s	0.2	12.7		1.0	0.2	12.6		1.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			19.4									
HCM 2010 LOS			B									
<b>Notes</b>												
























HCM 2010 Signalized Intersection Summary  
2: Kilgore Rd & International Dr

Existing PM  
12/12/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	499	44	82	363	41	30	65	49	91	96	87
Future Volume (veh/h)	66	499	44	82	363	41	30	65	49	91	96	87
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	72	542	48	89	395	45	33	71	53	99	104	95
Adj No. of Lanes	1	3	1	1	3	0	1	2	0	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	1587	494	116	1482	166	40	231	157	189	274	233
Arrive On Green	0.05	0.31	0.31	0.07	0.32	0.32	0.02	0.11	0.11	0.05	0.15	0.15
Sat Flow, veh/h	1774	5085	1583	1774	4642	520	1774	2016	1374	3442	1863	1583
Grp Volume(v), veh/h	72	542	48	89	287	153	33	61	63	99	104	95
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1771	1774	1770	1620	1721	1863	1583
Q Serve(g_s), s	1.8	3.8	1.0	2.3	2.9	3.0	0.9	1.5	1.6	1.3	2.3	2.5
Cycle Q Clear(g_c), s	1.8	3.8	1.0	2.3	2.9	3.0	0.9	1.5	1.6	1.3	2.3	2.5
Prop In Lane	1.00		1.00	1.00		0.29	1.00		0.85	1.00		1.00
Lane Grp Cap(c), veh/h	92	1587	494	116	1082	565	40	202	185	189	274	233
V/C Ratio(X)	0.78	0.34	0.10	0.77	0.26	0.27	0.83	0.30	0.34	0.52	0.38	0.41
Avail Cap(c_a), veh/h	773	7177	2235	784	4807	2511	753	1334	1221	1462	1404	1193
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	12.2	11.2	21.1	11.6	11.6	22.4	18.7	18.7	21.1	17.7	17.8
Incr Delay (d2), s/veh	13.4	0.1	0.1	10.0	0.1	0.3	33.1	0.8	1.1	2.2	0.9	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.8	0.4	1.4	1.4	1.5	0.8	0.8	0.8	0.7	1.3	1.2
LnGrp Delay(d),s/veh	34.9	12.3	11.3	31.1	11.8	11.9	55.4	19.5	19.8	23.4	18.6	18.9
LnGrp LOS	C	B	B	C	B	B	E	B	B	C	B	B
Approach Vol, veh/h		662			529			157			298	
Approach Delay, s/veh		14.7			15.1			27.2			20.3	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.4	19.9	6.5	12.1	7.7	19.5	8.0	10.7				
Change Period (Y+Rc), s	5.0	* 5.2	5.5	* 5.4	* 4.7	* 5.2	5.5	* 5.4				
Max Green Setting (Gmax), s	20.0	* 65	19.5	* 35	* 20	* 65	19.5	* 35				
Max Q Clear Time (g_c+H1), s	3.8	5.0	2.9	4.5	4.3	5.8	3.3	3.6				
Green Ext Time (p_c), s	0.1	8.6	0.0	1.7	0.2	8.6	0.2	1.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			17.0									
HCM 2010 LOS			B									
<b>Notes</b>												























HCM 2010 Signalized Intersection Summary  
 1: Kilgore Rd & White Rock Rd
























Existing Saturday  
 12/12/2016























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	311	2	39	361	42	5	24	26	26	39	11
Future Volume (veh/h)	13	311	2	39	361	42	5	24	26	26	39	11
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	14	338	2	42	392	46	5	26	28	28	42	12
Adj No. of Lanes	1	2	1	1	3	0	1	1	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	19	1054	471	51	1408	162	66	69	59	83	128	35
Arrive On Green	0.01	0.30	0.30	0.03	0.30	0.30	0.04	0.04	0.04	0.05	0.05	0.05
Sat Flow, veh/h	1774	3539	1583	1774	4626	533	1774	1863	1583	1774	2747	753
Grp Volume(v), veh/h	14	338	2	42	285	153	5	26	28	28	26	28
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1695	1769	1774	1863	1583	1774	1770	1730
Q Serve(g_s), s	0.3	2.7	0.0	0.8	2.3	2.4	0.1	0.5	0.6	0.5	0.5	0.6
Cycle Q Clear(g_c), s	0.3	2.7	0.0	0.8	2.3	2.4	0.1	0.5	0.6	0.5	0.5	0.6
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	19	1054	471	51	1032	538	66	69	59	83	83	81
V/C Ratio(X)	0.72	0.32	0.00	0.83	0.28	0.28	0.08	0.38	0.48	0.34	0.32	0.34
Avail Cap(c_a), veh/h	962	6440	2881	1476	6112	3189	1703	1788	1520	1708	1703	1665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.7	9.8	8.9	17.4	9.5	9.5	16.7	16.9	17.0	16.6	16.6	16.6
Incr Delay (d2), s/veh	40.1	0.2	0.0	27.3	0.1	0.3	0.5	3.3	5.9	2.4	2.2	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.3	0.0	0.8	1.1	1.2	0.1	0.3	0.4	0.3	0.3	0.3
LnGrp Delay(d),s/veh	57.8	10.0	8.9	44.7	9.6	9.8	17.2	20.2	22.8	19.0	18.8	19.1
LnGrp LOS	E	A	A	D	A	A	B	C	C	B	B	B
Approach Vol, veh/h		354			480			59			82	
Approach Delay, s/veh		11.9			12.8			21.2			18.9	
Approach LOS		B			B			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	16.1		6.8	6.1	15.9		7.1				
Change Period (Y+Rc), s	5.5	* 5.2		5.5	* 5.1	* 5.2		5.4				
Max Green Setting (Gmax), s	19.5	* 65		34.5	* 30	* 65		34.6				
Max Q Clear Time (g_c+H1), s	2.3	4.4		2.6	2.8	4.7		2.6				
Green Ext Time (p_c), s	0.0	6.0		0.2	0.1	6.0		0.3				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				13.5								
HCM 2010 LOS				B								
<b>Notes</b>												

HCM 2010 Signalized Intersection Summary  
 2: Kilgore Rd & International Dr
























Existing Saturday  
 12/12/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	250	25	45	185	20	15	35	25	45	45	45
Future Volume (veh/h)	35	250	25	45	185	20	15	35	25	45	45	45
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	38	272	27	49	201	22	16	38	27	49	49	49
Adj No. of Lanes	1	3	1	1	3	0	1	2	0	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	47	1109	345	58	1004	107	22	173	111	113	194	165
Arrive On Green	0.03	0.22	0.22	0.03	0.22	0.22	0.01	0.08	0.08	0.03	0.10	0.10
Sat Flow, veh/h	1774	5085	1583	1774	4667	498	1774	2067	1331	3442	1863	1583
Grp Volume(v), veh/h	38	272	27	49	145	78	16	32	33	49	49	49
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1775	1774	1770	1628	1721	1863	1583
Q Serve(g_s), s	0.7	1.5	0.4	0.9	1.2	1.2	0.3	0.6	0.6	0.5	0.8	0.9
Cycle Q Clear(g_c), s	0.7	1.5	0.4	0.9	1.2	1.2	0.3	0.6	0.6	0.5	0.8	0.9
Prop In Lane	1.00		1.00	1.00		0.28	1.00		0.82	1.00		1.00
Lane Grp Cap(c), veh/h	47	1109	345	58	730	382	22	148	136	113	194	165
V/C Ratio(X)	0.80	0.25	0.08	0.84	0.20	0.21	0.73	0.22	0.24	0.43	0.25	0.30
Avail Cap(c_a), veh/h	1079	10019	3119	1095	6710	3513	1052	1862	1713	2040	1960	1666
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.9	10.6	10.2	15.8	10.6	10.6	16.2	14.1	14.1	15.6	13.6	13.6
Incr Delay (d2), s/veh	25.6	0.1	0.1	25.6	0.1	0.3	36.3	0.7	0.9	2.6	0.7	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.7	0.2	0.8	0.6	0.6	0.4	0.3	0.3	0.3	0.4	0.4
LnGrp Delay(d),s/veh	41.5	10.7	10.3	41.5	10.7	10.9	52.5	14.8	15.0	18.2	14.2	14.6
LnGrp LOS	D	B	B	D	B	B	D	B	B	B	B	B
Approach Vol, veh/h		337			272			81			147	
Approach Delay, s/veh		14.2			16.3			22.3			15.7	
Approach LOS		B			B			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.9	12.3	5.9	8.8	5.8	12.4	6.6	8.2				
Change Period (Y+Rc), s	5.0	* 5.2	5.5	* 5.4	* 4.7	* 5.2	5.5	* 5.4				
Max Green Setting (Gmax), s	20.0	* 65	19.5	* 35	* 20	* 65	19.5	* 35				
Max Q Clear Time (g_c+H1), s	2.7	3.2	2.3	2.9	2.9	3.5	2.5	2.6				
Green Ext Time (p_c), s	0.1	3.8	0.0	0.8	0.1	3.8	0.1	0.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			15.9									
HCM 2010 LOS			B									
<b>Notes</b>												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	679	54	100	442	81	54	125	82	40	106	42
Future Volume (veh/h)	94	679	54	100	442	81	54	125	82	40	106	42
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	102	738	59	109	480	88	59	136	89	43	115	46
Adj No. of Lanes	1	2	1	1	3	0	1	1	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	1369	613	145	1678	301	209	220	187	160	226	86
Arrive On Green	0.08	0.39	0.39	0.08	0.39	0.39	0.12	0.12	0.12	0.09	0.09	0.09
Sat Flow, veh/h	1774	3539	1583	1774	4338	778	1774	1863	1583	1774	2506	958
Grp Volume(v), veh/h	102	738	59	109	373	195	59	136	89	43	80	81
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1695	1725	1774	1863	1583	1774	1770	1694
Q Serve(g_s), s	3.7	10.6	1.6	3.9	5.0	5.1	2.0	4.6	3.4	1.5	2.8	3.0
Cycle Q Clear(g_c), s	3.7	10.6	1.6	3.9	5.0	5.1	2.0	4.6	3.4	1.5	2.8	3.0
Prop In Lane	1.00		1.00	1.00		0.45	1.00		1.00	1.00		0.57
Lane Grp Cap(c), veh/h	134	1369	613	145	1311	667	209	220	187	160	159	153
V/C Ratio(X)	0.76	0.54	0.10	0.75	0.28	0.29	0.28	0.62	0.48	0.27	0.50	0.53
Avail Cap(c_a), veh/h	528	3531	1580	809	3352	1706	934	980	833	936	934	894
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.7	15.6	12.8	29.4	13.8	13.9	26.4	27.5	27.0	27.8	28.4	28.5
Incr Delay (d2), s/veh	8.5	0.3	0.1	7.6	0.1	0.2	0.7	2.8	1.9	0.9	2.4	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	5.2	0.7	2.2	2.4	2.5	1.0	2.5	1.6	0.8	1.5	1.5
LnGrp Delay(d),s/veh	38.2	15.9	12.9	37.1	14.0	14.1	27.1	30.3	28.9	28.7	30.8	31.4
LnGrp LOS	D	B	B	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		899			677			284			204	
Approach Delay, s/veh		18.2			17.7			29.2			30.6	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.5	30.6		13.2	10.5	30.6		11.3				
Change Period (Y+Rc), s	5.5	* 5.2		5.5	* 5.1	* 5.2		5.4				
Max Green Setting (Gmax), s	19.5	* 65		34.5	* 30	* 65		34.6				
Max Q Clear Time (g_c+H1), s	5.7	7.1		6.6	5.9	12.6		5.0				
Green Ext Time (p_c), s	0.2	12.9		1.2	0.3	12.8		1.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			20.8									
HCM 2010 LOS			C									
<b>Notes</b>												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	499	44	82	363	50	30	69	49	101	99	96
Future Volume (veh/h)	75	499	44	82	363	50	30	69	49	101	99	96
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	82	542	48	89	395	54	33	75	53	110	108	104
Adj No. of Lanes	1	3	1	1	3	0	1	2	0	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	106	1583	493	116	1409	189	40	240	155	208	287	244
Arrive On Green	0.06	0.31	0.31	0.07	0.31	0.31	0.02	0.12	0.12	0.06	0.15	0.15
Sat Flow, veh/h	1774	5085	1583	1774	4538	608	1774	2060	1336	3442	1863	1583
Grp Volume(v), veh/h	82	542	48	89	293	156	33	63	65	110	108	104
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1756	1774	1770	1627	1721	1863	1583
Q Serve(g_s), s	2.1	3.8	1.0	2.3	3.0	3.1	0.9	1.5	1.7	1.4	2.4	2.8
Cycle Q Clear(g_c), s	2.1	3.8	1.0	2.3	3.0	3.1	0.9	1.5	1.7	1.4	2.4	2.8
Prop In Lane	1.00		1.00	1.00		0.35	1.00		0.82	1.00		1.00
Lane Grp Cap(c), veh/h	106	1583	493	116	1053	545	40	206	189	208	287	244
V/C Ratio(X)	0.77	0.34	0.10	0.77	0.28	0.29	0.83	0.31	0.34	0.53	0.38	0.43
Avail Cap(c_a), veh/h	762	7073	2202	773	4737	2453	743	1314	1208	1440	1383	1176
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.6	12.4	11.4	21.4	12.1	12.2	22.7	18.9	18.9	21.2	17.7	17.8
Incr Delay (d2), s/veh	11.1	0.1	0.1	10.0	0.1	0.3	33.5	0.8	1.1	2.1	0.8	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.8	0.4	1.4	1.4	1.6	0.8	0.8	0.8	0.7	1.3	1.3
LnGrp Delay(d),s/veh	32.7	12.5	11.5	31.4	12.3	12.4	56.2	19.7	20.0	23.3	18.5	19.0
LnGrp LOS	C	B	B	C	B	B	E	B	C	C	B	B
Approach Vol, veh/h		672			538			161			322	
Approach Delay, s/veh		14.9			15.5			27.3			20.3	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	19.7	6.5	12.6	7.8	19.7	8.3	10.8				
Change Period (Y+Rc), s	5.0	* 5.2	5.5	* 5.4	* 4.7	* 5.2	5.5	* 5.4				
Max Green Setting (Gmax), s	20.0	* 65	19.5	* 35	* 20	* 65	19.5	* 35				
Max Q Clear Time (g_c+H1), s	4.1	5.1	2.9	4.8	4.3	5.8	3.4	3.7				
Green Ext Time (p_c), s	0.1	8.7	0.0	1.8	0.2	8.7	0.3	1.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay				17.3								
HCM 2010 LOS				B								
<b>Notes</b>												



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	311	48	85	361	42	51	29	72	26	44	11
Future Volume (veh/h)	13	311	48	85	361	42	51	29	72	26	44	11
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	14	338	52	92	392	46	55	32	78	28	48	12
Adj No. of Lanes	1	2	1	1	3	0	1	1	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	19	979	438	121	1501	173	164	173	147	84	134	32
Arrive On Green	0.01	0.28	0.28	0.07	0.32	0.32	0.09	0.09	0.09	0.05	0.05	0.05
Sat Flow, veh/h	1774	3539	1583	1774	4626	533	1774	1863	1583	1774	2830	682
Grp Volume(v), veh/h	14	338	52	92	285	153	55	32	78	28	29	31
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1695	1769	1774	1863	1583	1774	1770	1742
Q Serve(g_s), s	0.3	3.1	1.0	2.1	2.6	2.6	1.2	0.7	1.9	0.6	0.7	0.7
Cycle Q Clear(g_c), s	0.3	3.1	1.0	2.1	2.6	2.6	1.2	0.7	1.9	0.6	0.7	0.7
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	19	979	438	121	1100	574	164	173	147	84	84	82
V/C Ratio(X)	0.73	0.35	0.12	0.76	0.26	0.27	0.33	0.19	0.53	0.33	0.35	0.37
Avail Cap(c_a), veh/h	841	5624	2516	1289	5338	2785	1487	1561	1327	1491	1488	1465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.3	11.9	11.1	18.8	10.3	10.3	17.5	17.2	17.8	19.0	19.0	19.0
Incr Delay (d2), s/veh	41.4	0.2	0.1	9.4	0.1	0.2	1.2	0.5	3.0	2.3	2.5	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.5	0.4	1.3	1.2	1.3	0.6	0.4	1.0	0.4	0.4	0.4
LnGrp Delay(d),s/veh	61.7	12.1	11.3	28.2	10.4	10.5	18.7	17.7	20.8	21.3	21.5	21.8
LnGrp LOS	E	B	B	C	B	B	B	B	C	C	C	C
Approach Vol, veh/h		404			530			165			88	
Approach Delay, s/veh		13.7			13.5			19.5			21.5	
Approach LOS		B			B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	18.6		9.3	7.9	16.6		7.3				
Change Period (Y+Rc), s	5.5	* 5.2		5.5	* 5.1	* 5.2		5.4				
Max Green Setting (Gmax), s	19.5	* 65		34.5	* 30	* 65		34.6				
Max Q Clear Time (g_c+H1), s	2.3	4.6		3.9	4.1	5.1		2.7				
Green Ext Time (p_c), s	0.0	6.2		0.6	0.2	6.2		0.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			15.0									
HCM 2010 LOS			B									
<b>Notes</b>												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	250	25	45	185	33	15	40	25	58	50	58
Future Volume (veh/h)	48	250	25	45	185	33	15	40	25	58	50	58
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	52	272	27	49	201	36	16	43	27	63	54	63
Adj No. of Lanes	1	3	1	1	3	0	1	2	0	2	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	1137	354	58	928	160	22	195	112	136	219	186
Arrive On Green	0.04	0.22	0.22	0.03	0.21	0.21	0.01	0.09	0.09	0.04	0.12	0.12
Sat Flow, veh/h	1774	5085	1583	1774	4368	752	1774	2166	1247	3442	1863	1583
Grp Volume(v), veh/h	52	272	27	49	154	83	16	34	36	63	54	63
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1730	1774	1770	1643	1721	1863	1583
Q Serve(g_s), s	1.0	1.5	0.5	0.9	1.3	1.3	0.3	0.6	0.7	0.6	0.9	1.2
Cycle Q Clear(g_c), s	1.0	1.5	0.5	0.9	1.3	1.3	0.3	0.6	0.7	0.6	0.9	1.2
Prop In Lane	1.00		1.00	1.00		0.43	1.00		0.76	1.00		1.00
Lane Grp Cap(c), veh/h	62	1137	354	58	720	368	22	160	148	136	219	186
V/C Ratio(X)	0.84	0.24	0.08	0.84	0.21	0.23	0.73	0.22	0.24	0.46	0.25	0.34
Avail Cap(c_a), veh/h	1047	9725	3028	1063	6513	3324	1021	1807	1677	1981	1902	1617
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.3	10.8	10.4	16.3	11.0	11.0	16.7	14.3	14.3	15.9	13.6	13.7
Incr Delay (d2), s/veh	24.1	0.1	0.1	26.2	0.1	0.3	36.6	0.7	0.8	2.4	0.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.7	0.2	0.9	0.6	0.7	0.4	0.3	0.3	0.3	0.5	0.6
LnGrp Delay(d),s/veh	40.4	10.9	10.5	42.5	11.2	11.3	53.3	15.0	15.2	18.3	14.2	14.8
LnGrp LOS	D	B	B	D	B	B	D	B	B	B	B	B
Approach Vol, veh/h		351			286			86			180	
Approach Delay, s/veh		15.2			16.6			22.2			15.9	
Approach LOS		B			B			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.2	12.4	5.9	9.4	5.8	12.8	6.8	8.5				
Change Period (Y+Rc), s	5.0	* 5.2	5.5	* 5.4	* 4.7	* 5.2	5.5	* 5.4				
Max Green Setting (Gmax), s	20.0	* 65	19.5	* 35	* 20	* 65	19.5	* 35				
Max Q Clear Time (g_c+H1), s	3.0	3.3	2.3	3.2	2.9	3.5	2.6	2.7				
Green Ext Time (p_c), s	0.1	3.9	0.0	0.9	0.1	3.9	0.1	0.9				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			16.4									
HCM 2010 LOS			B									
<b>Notes</b>												